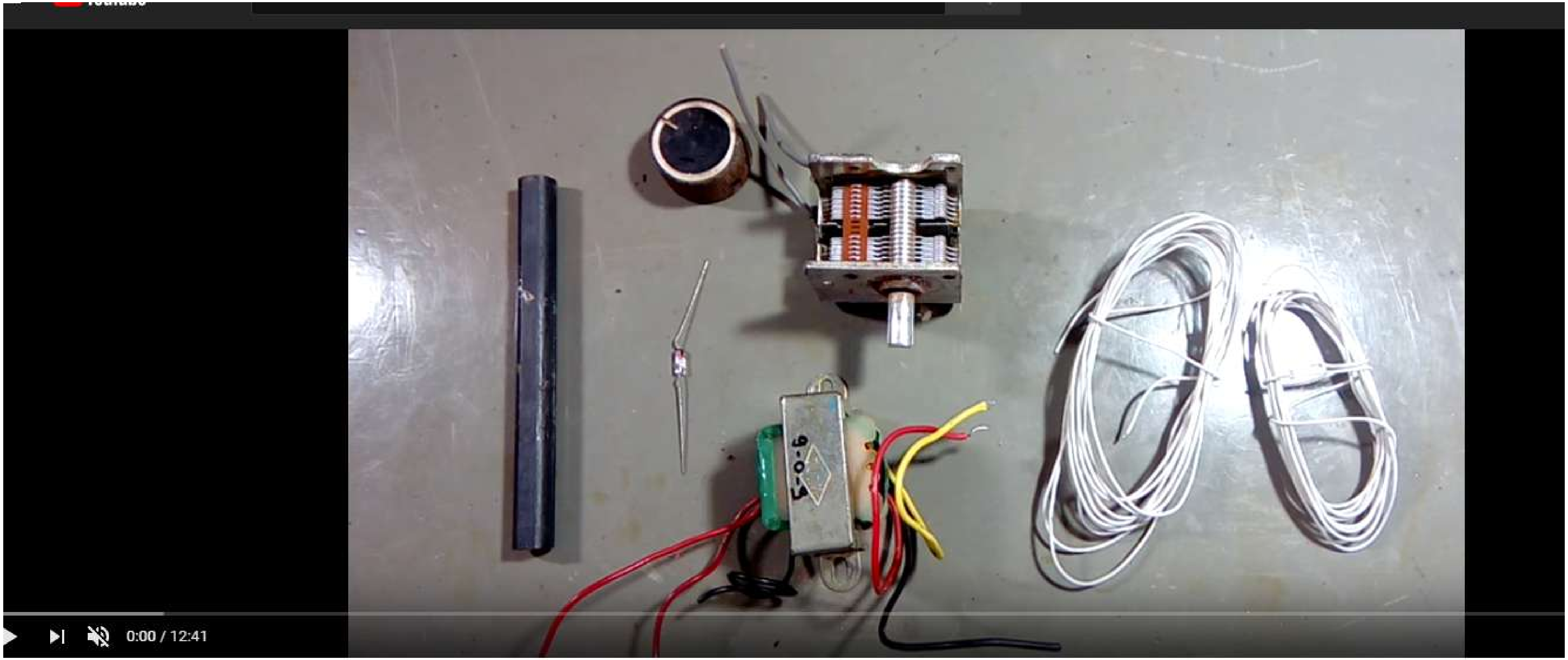
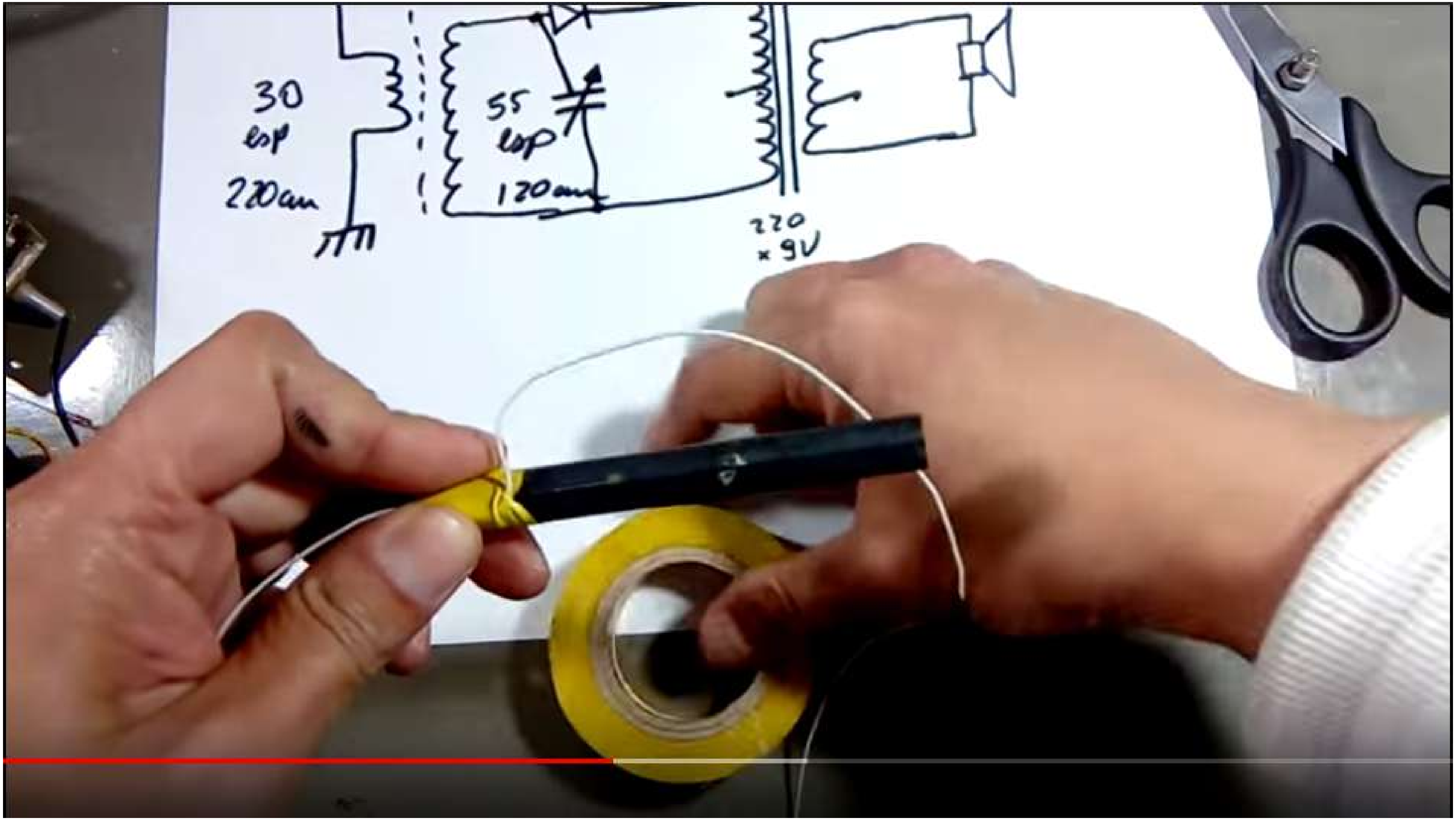


Montagem de um rádio AM a cristal de Germânio

Smarter Data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esp
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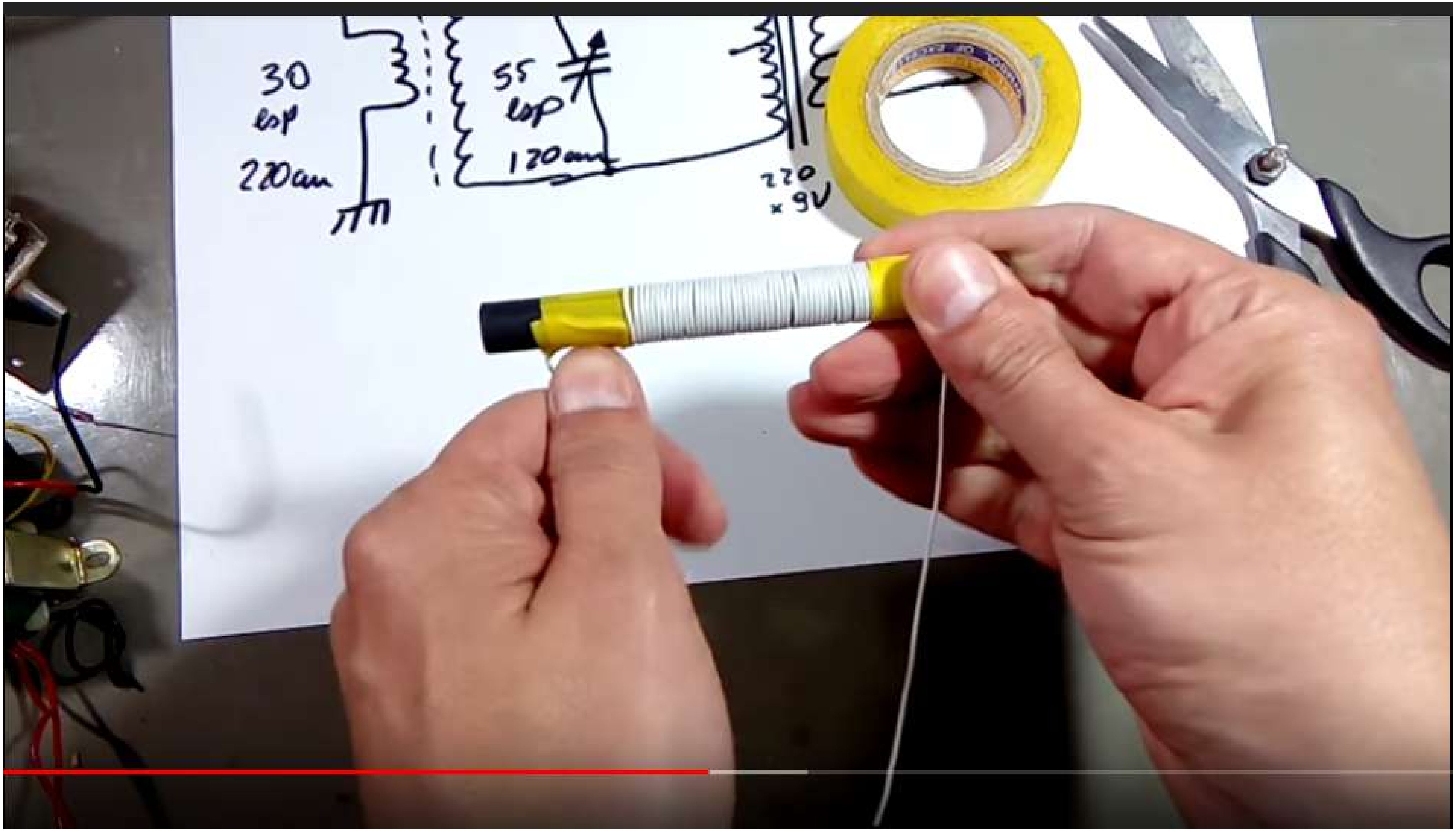
55
esp
120cm
220
x 9V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esp
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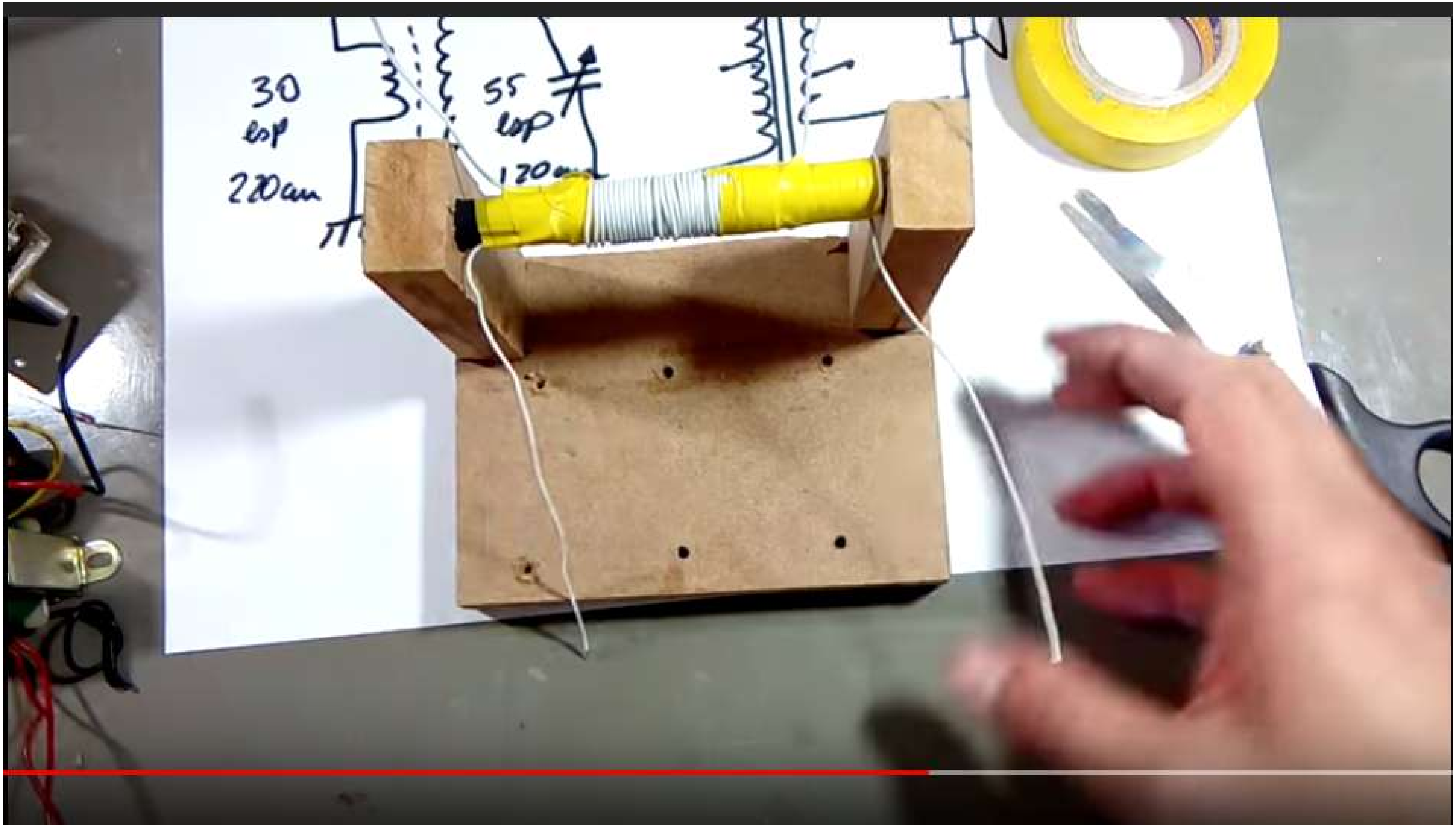
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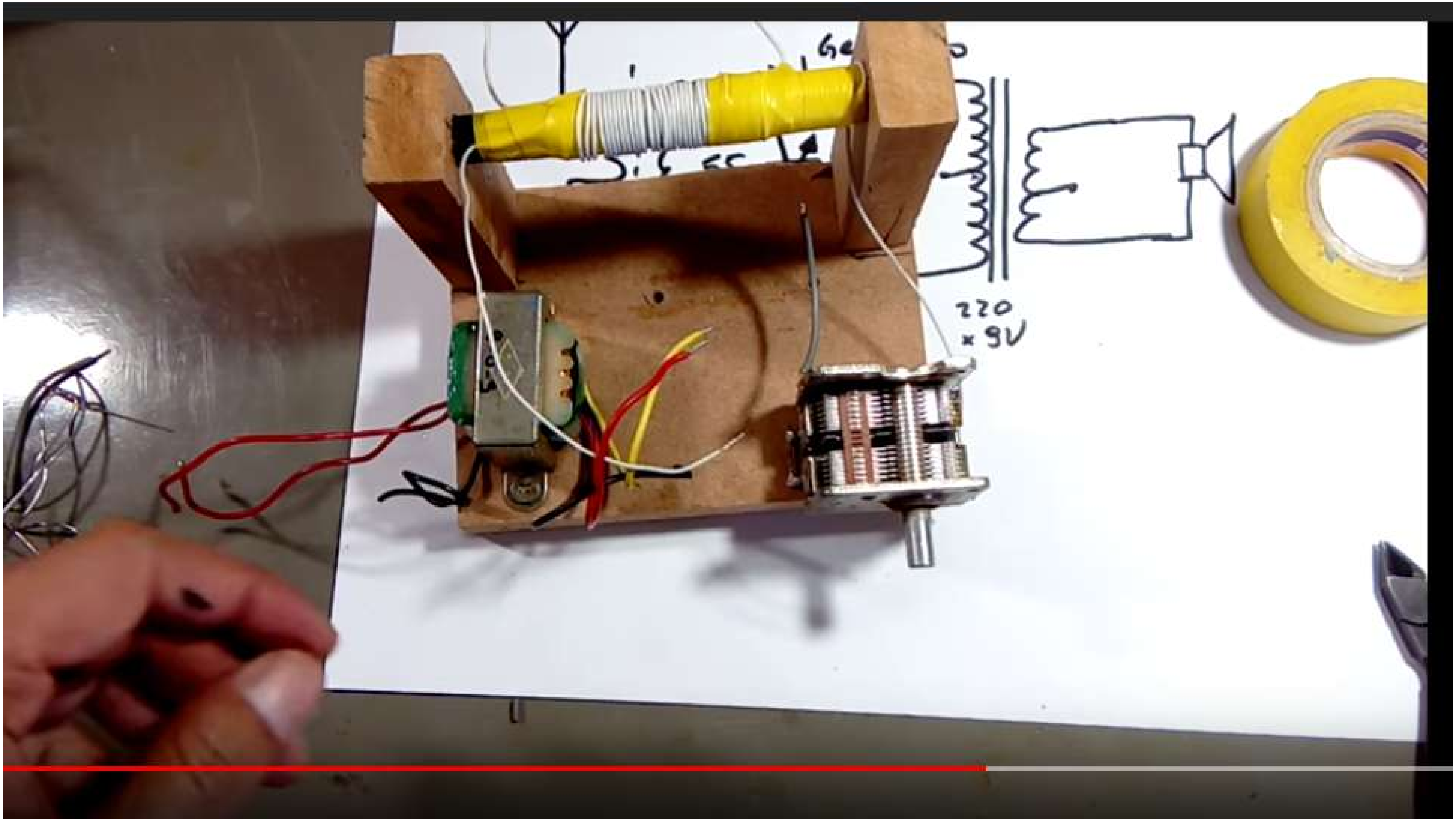
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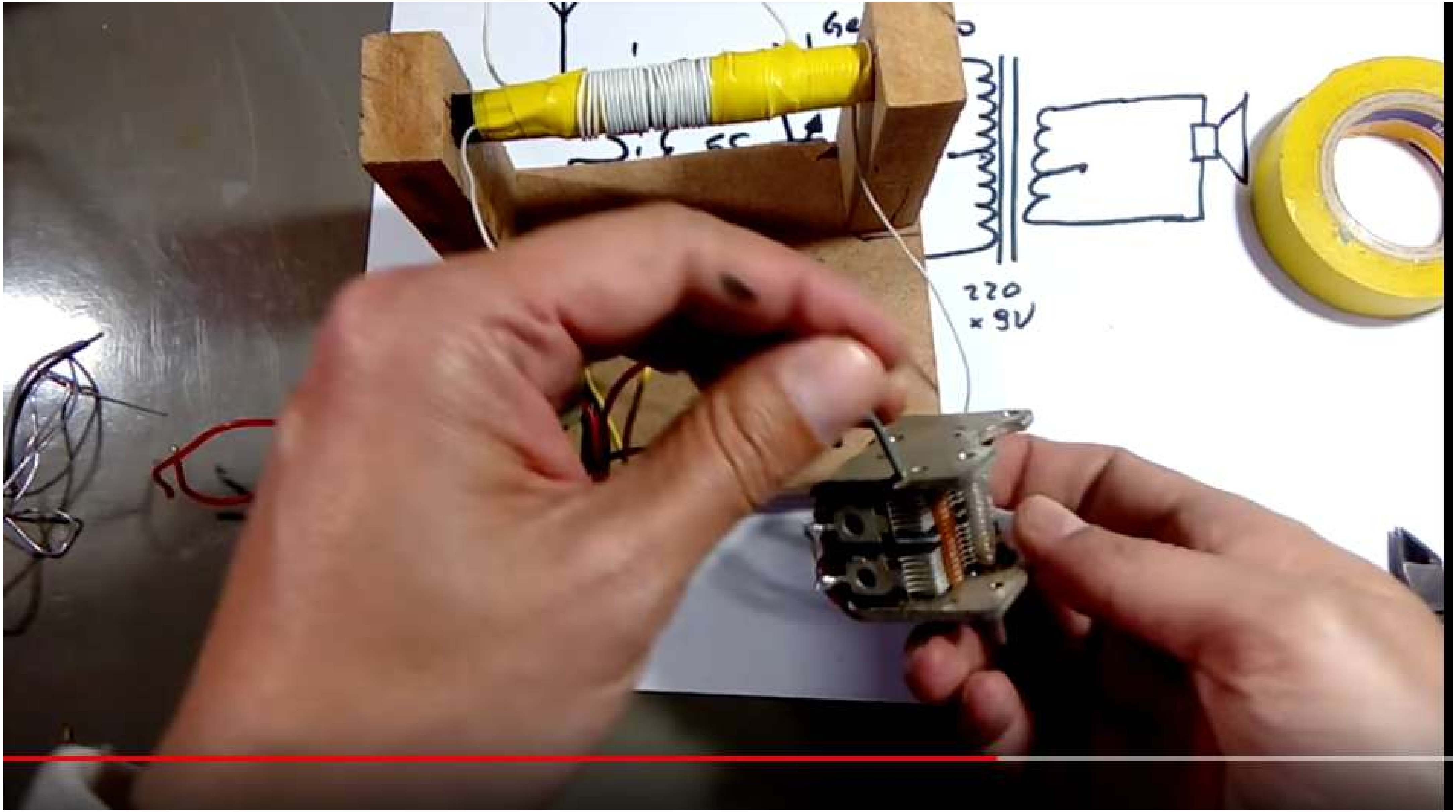
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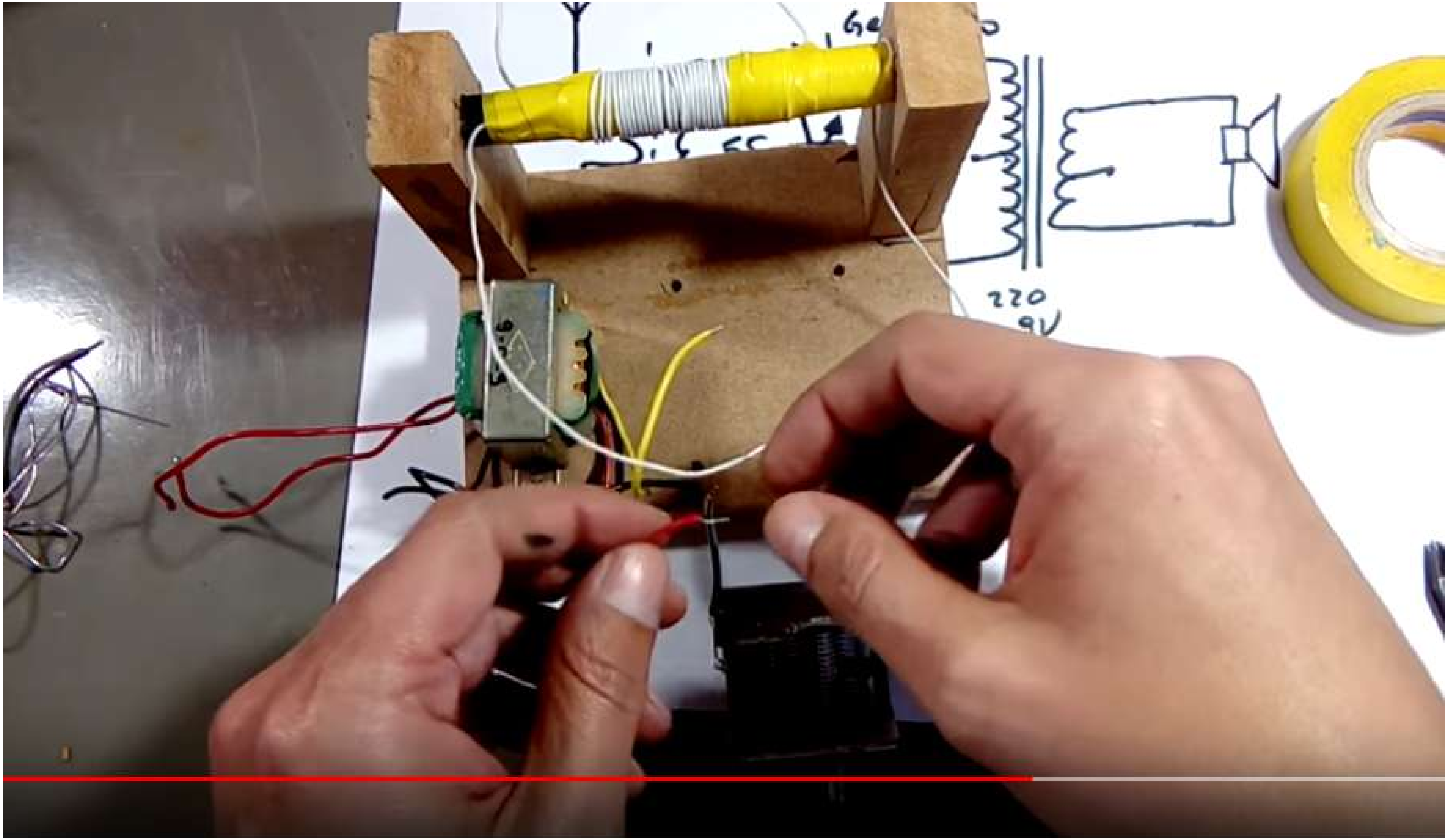
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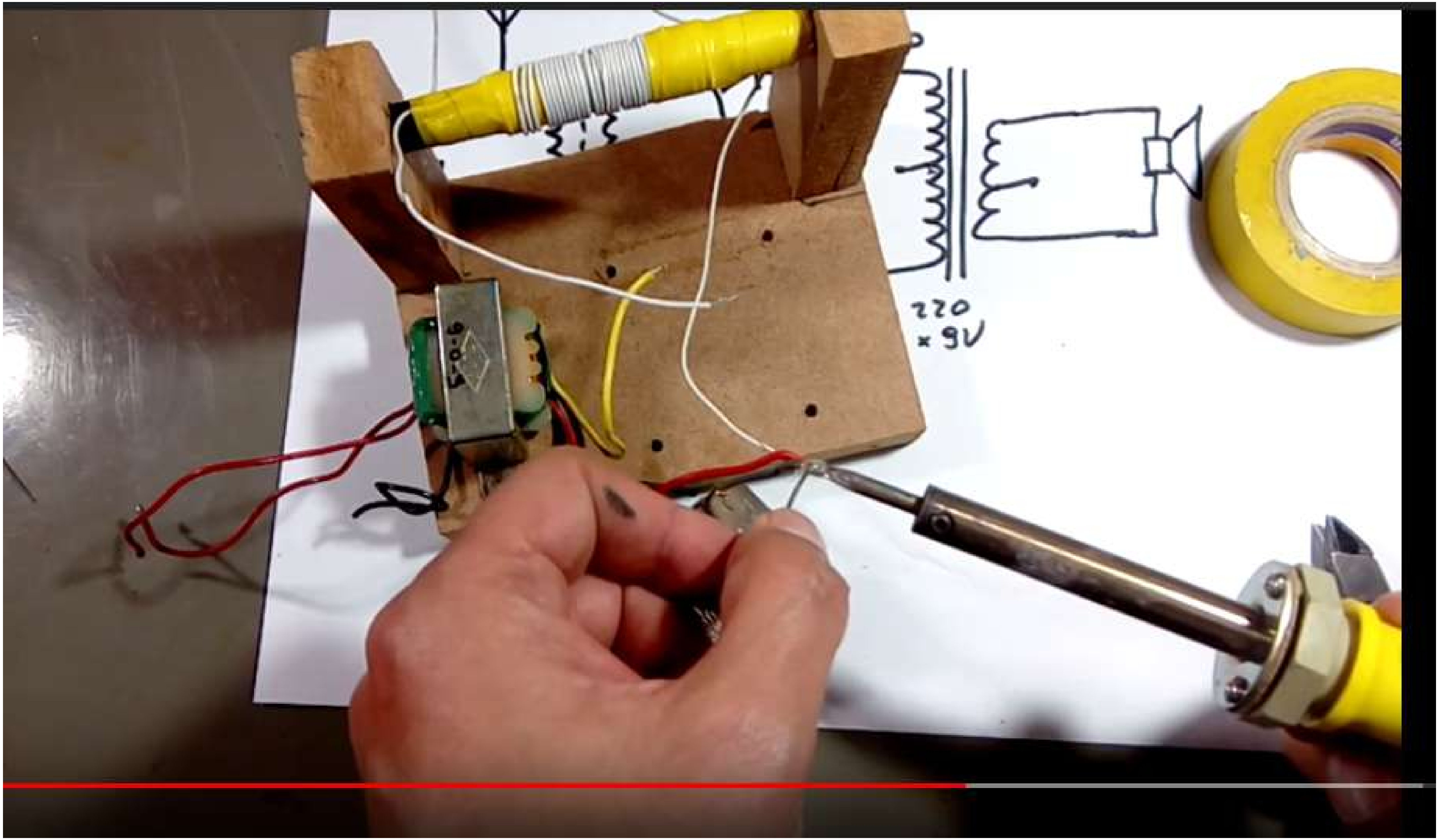
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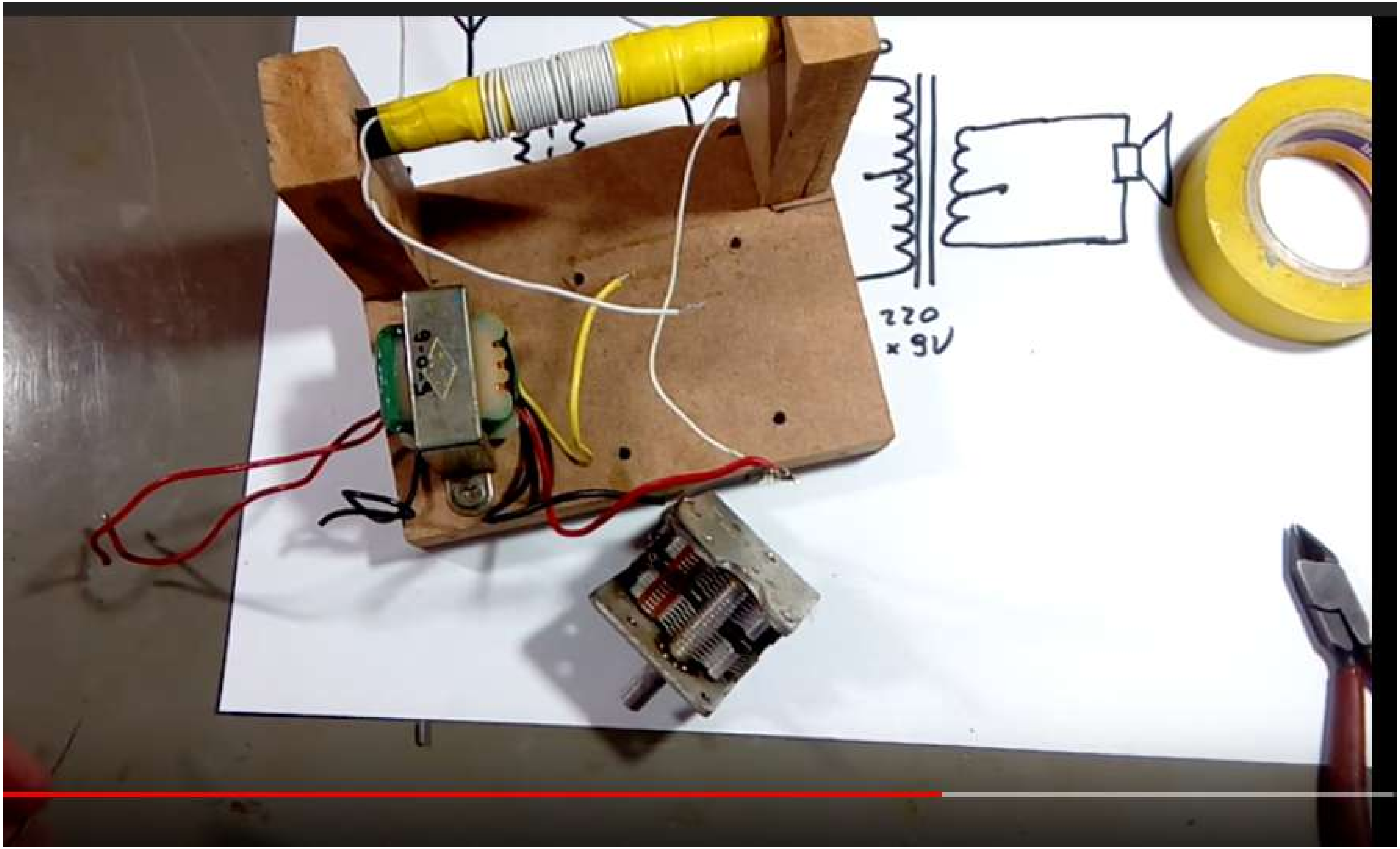
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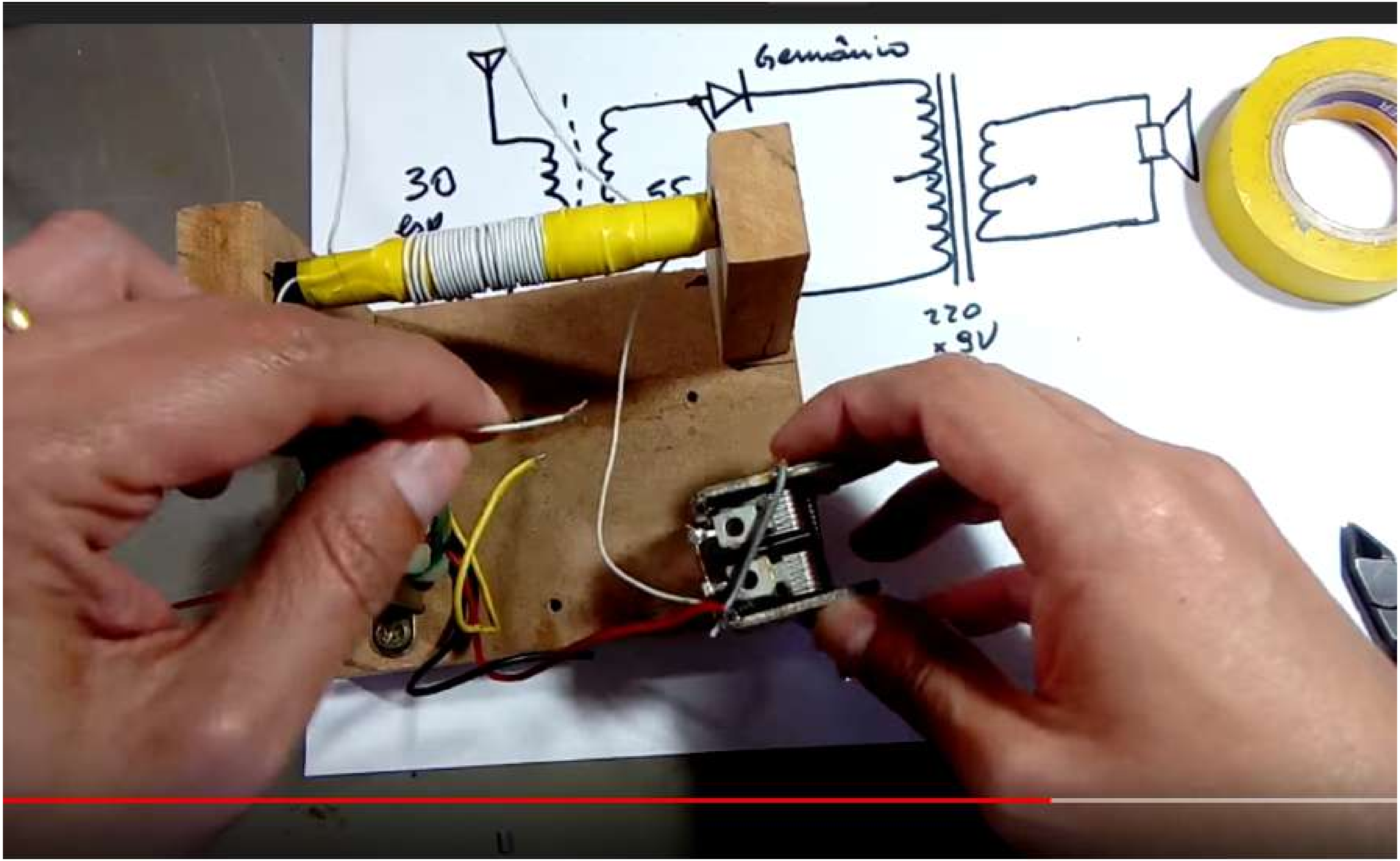
Germânio
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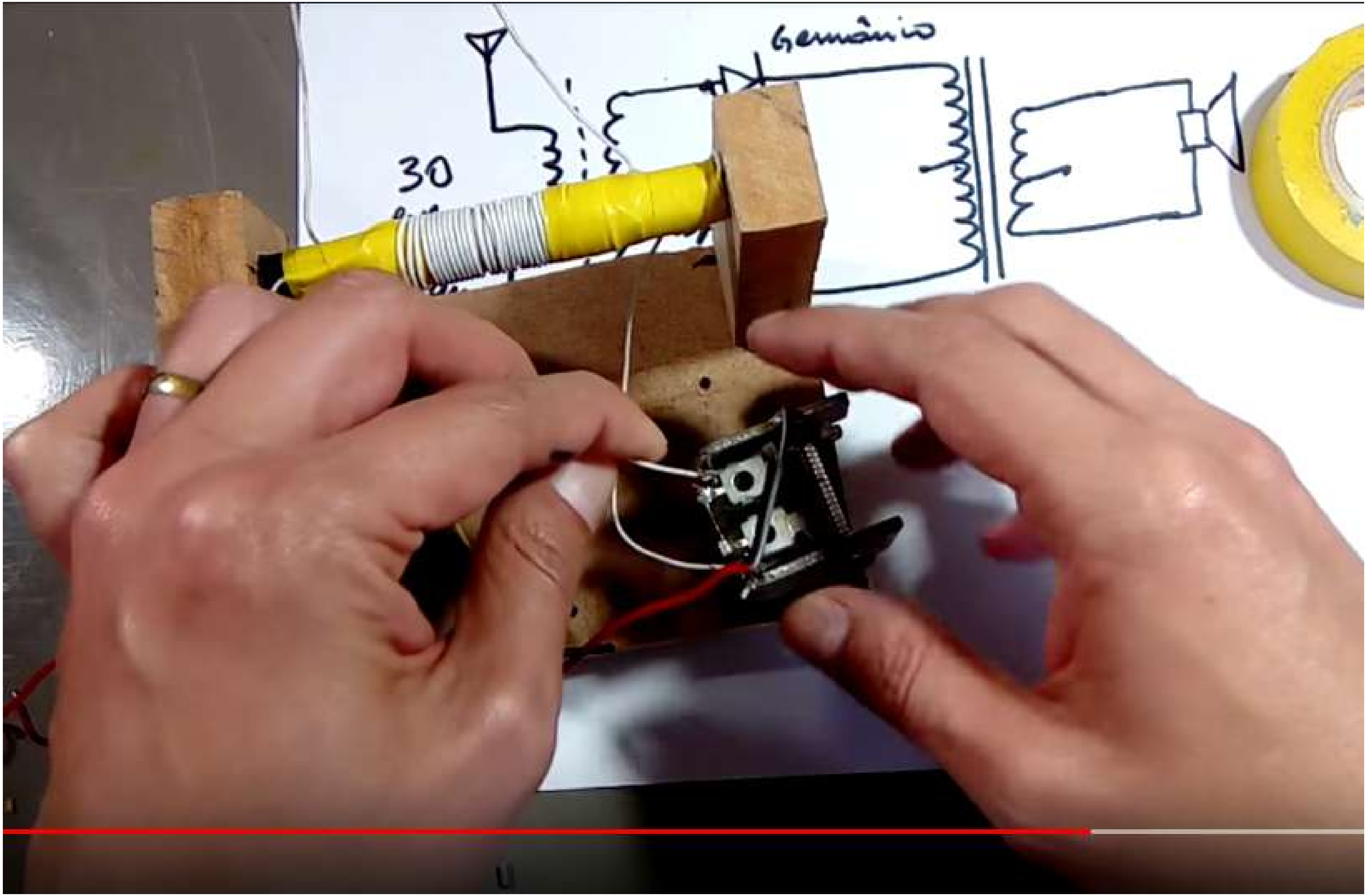

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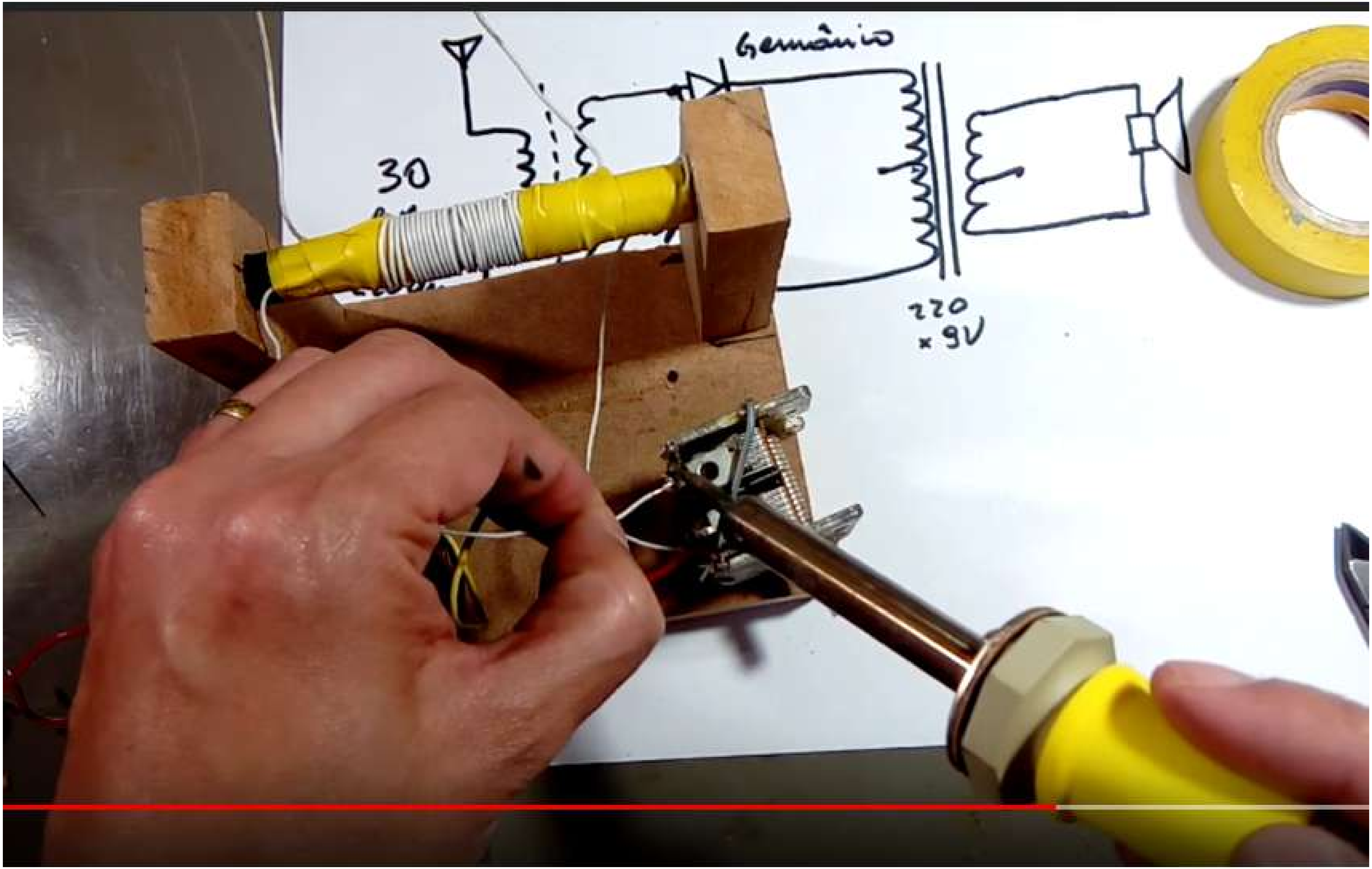
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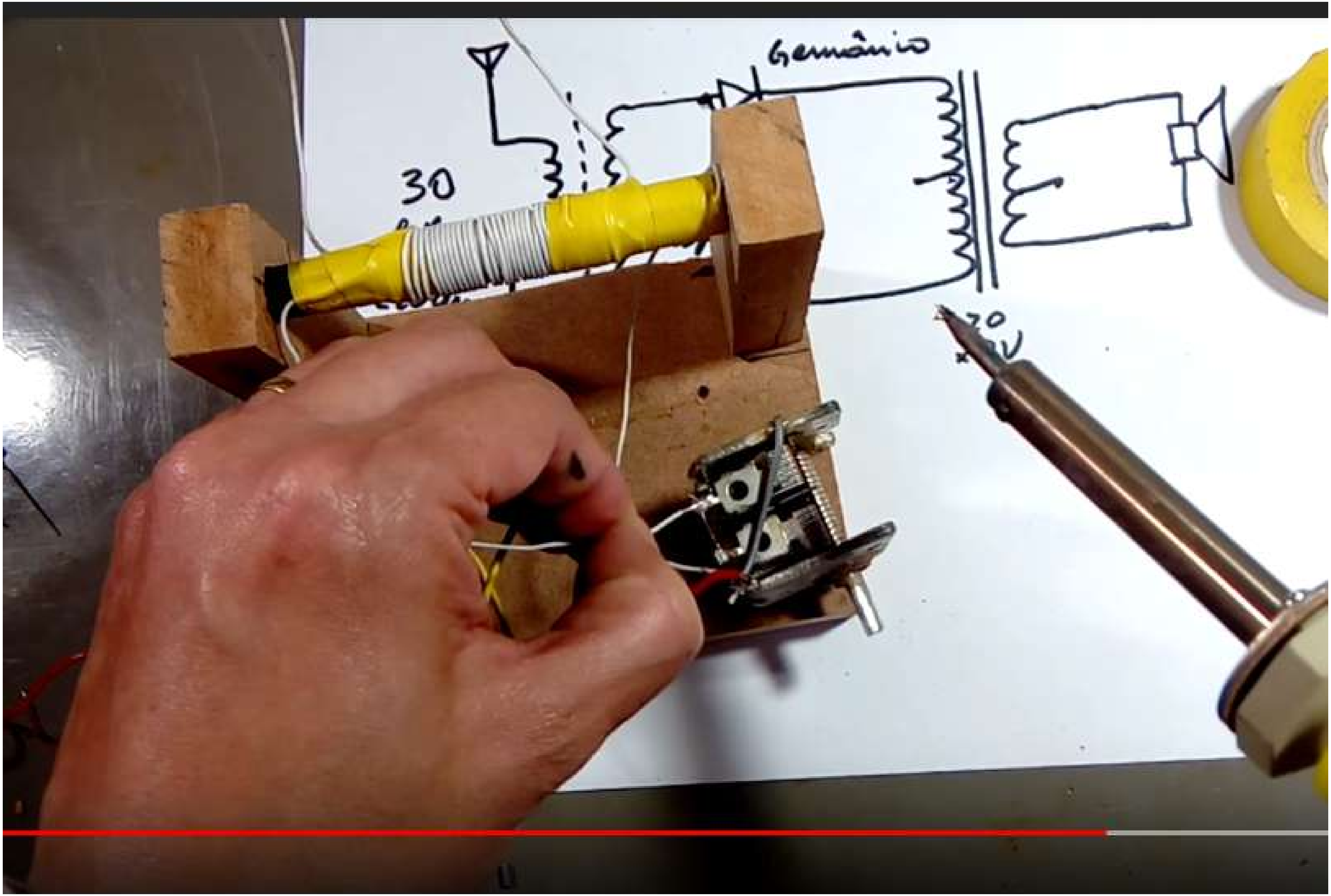

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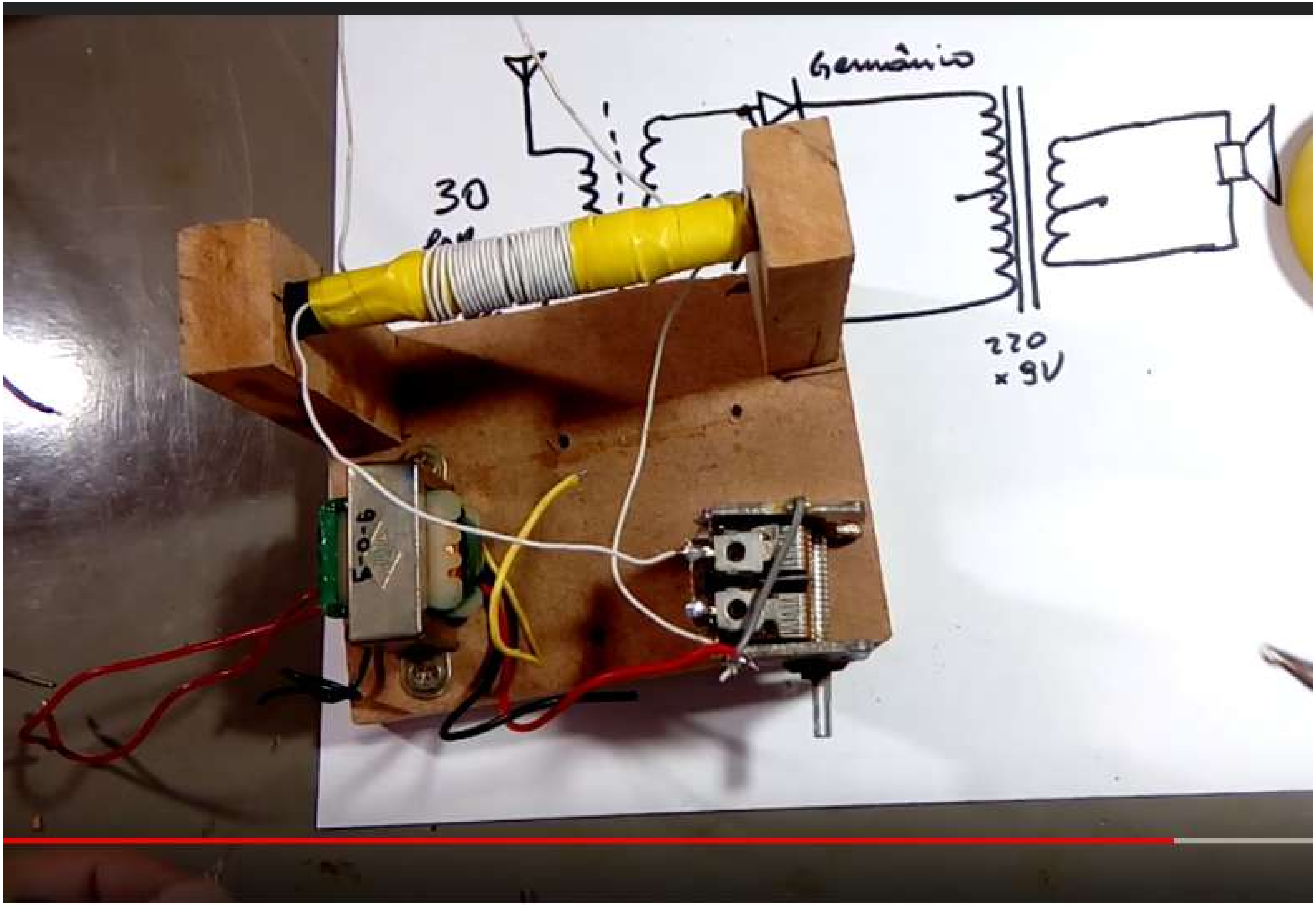
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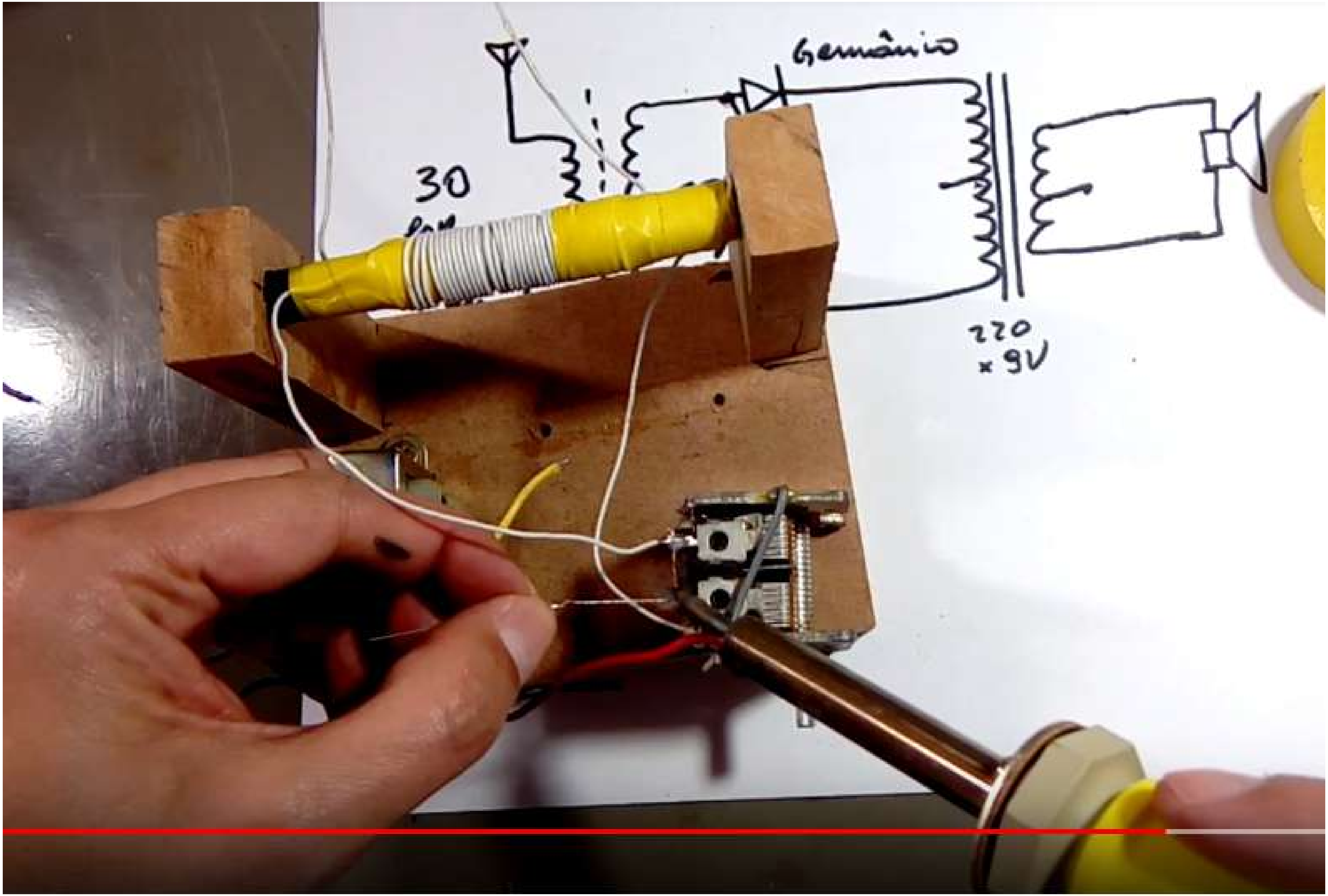

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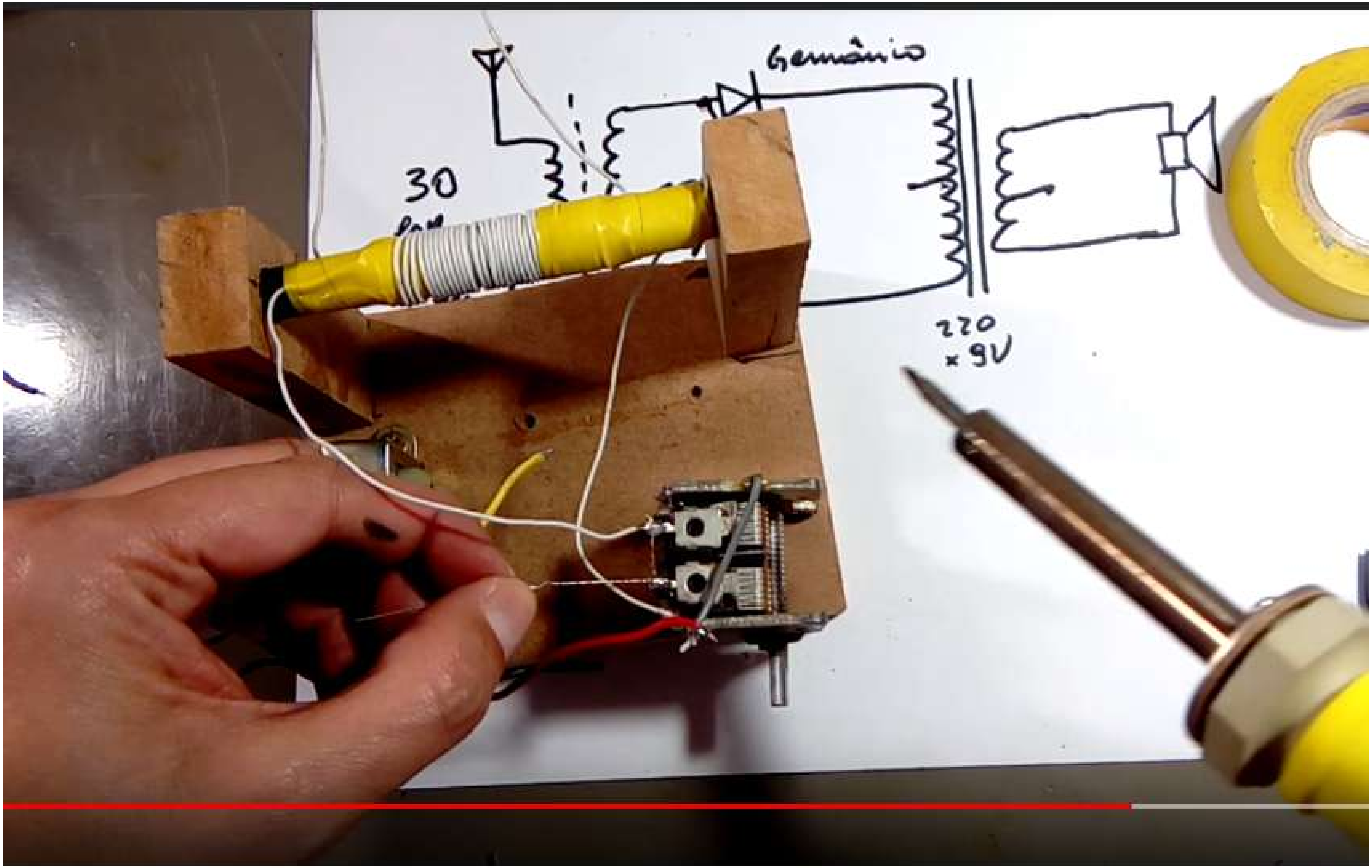
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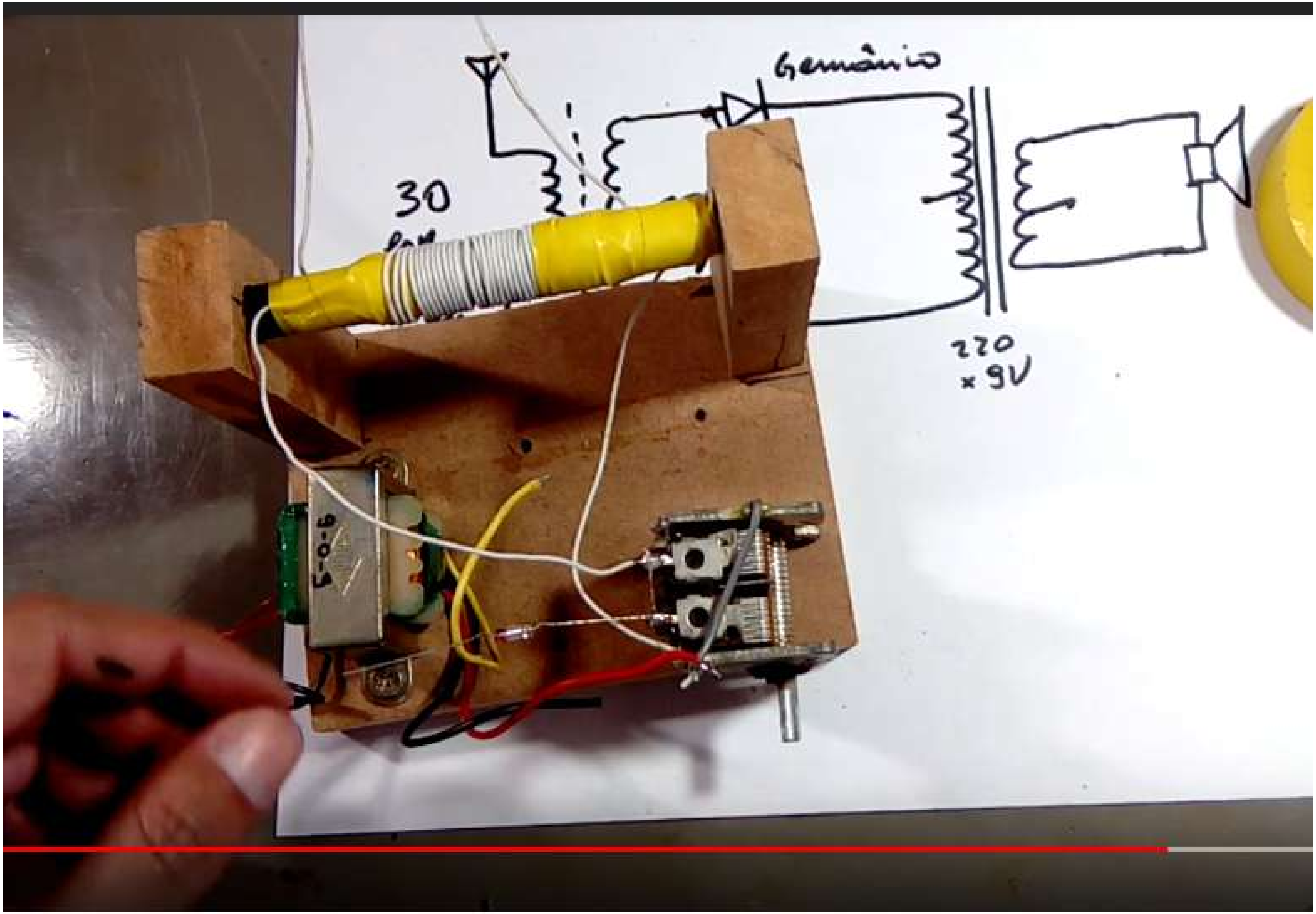

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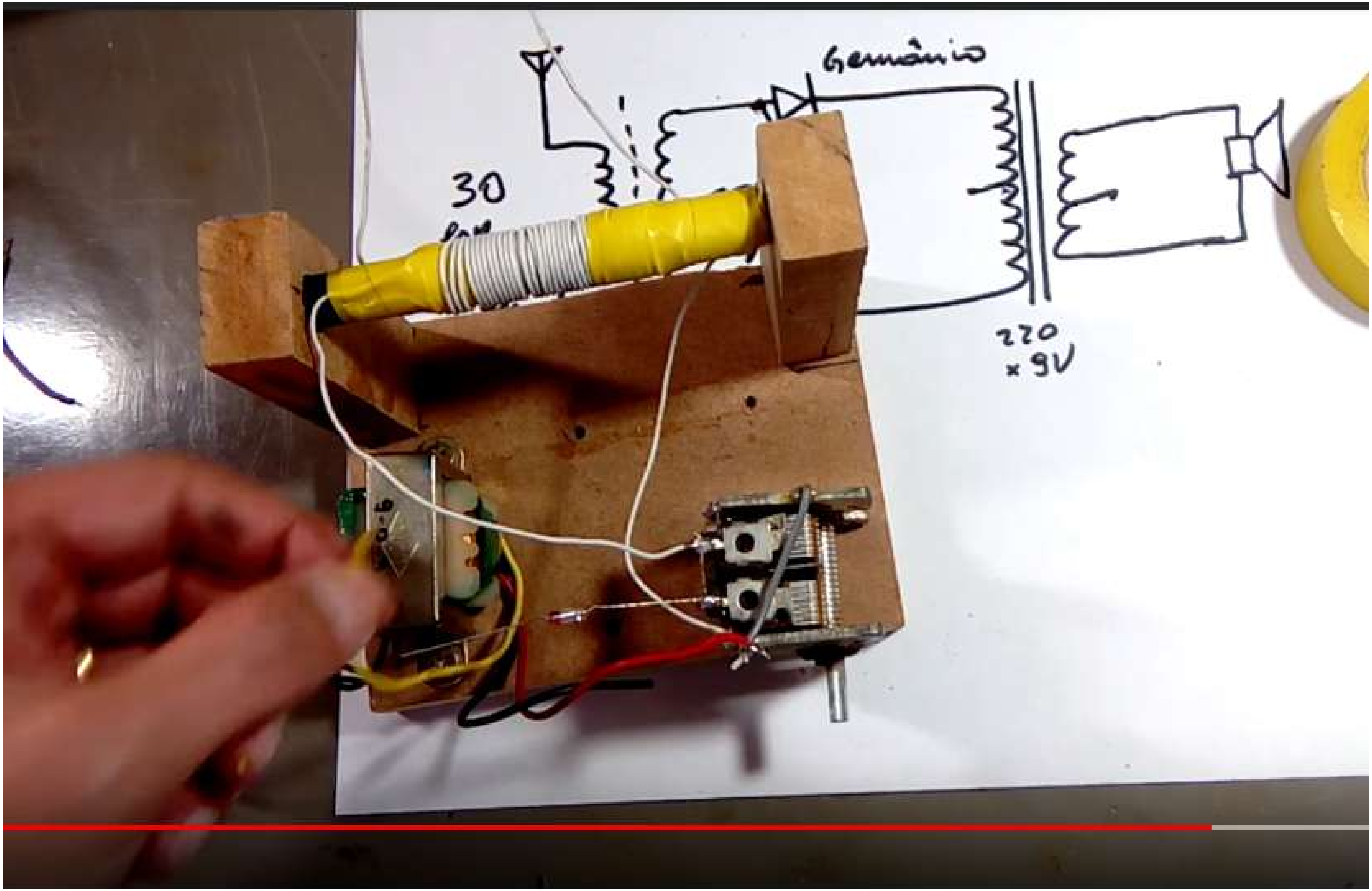
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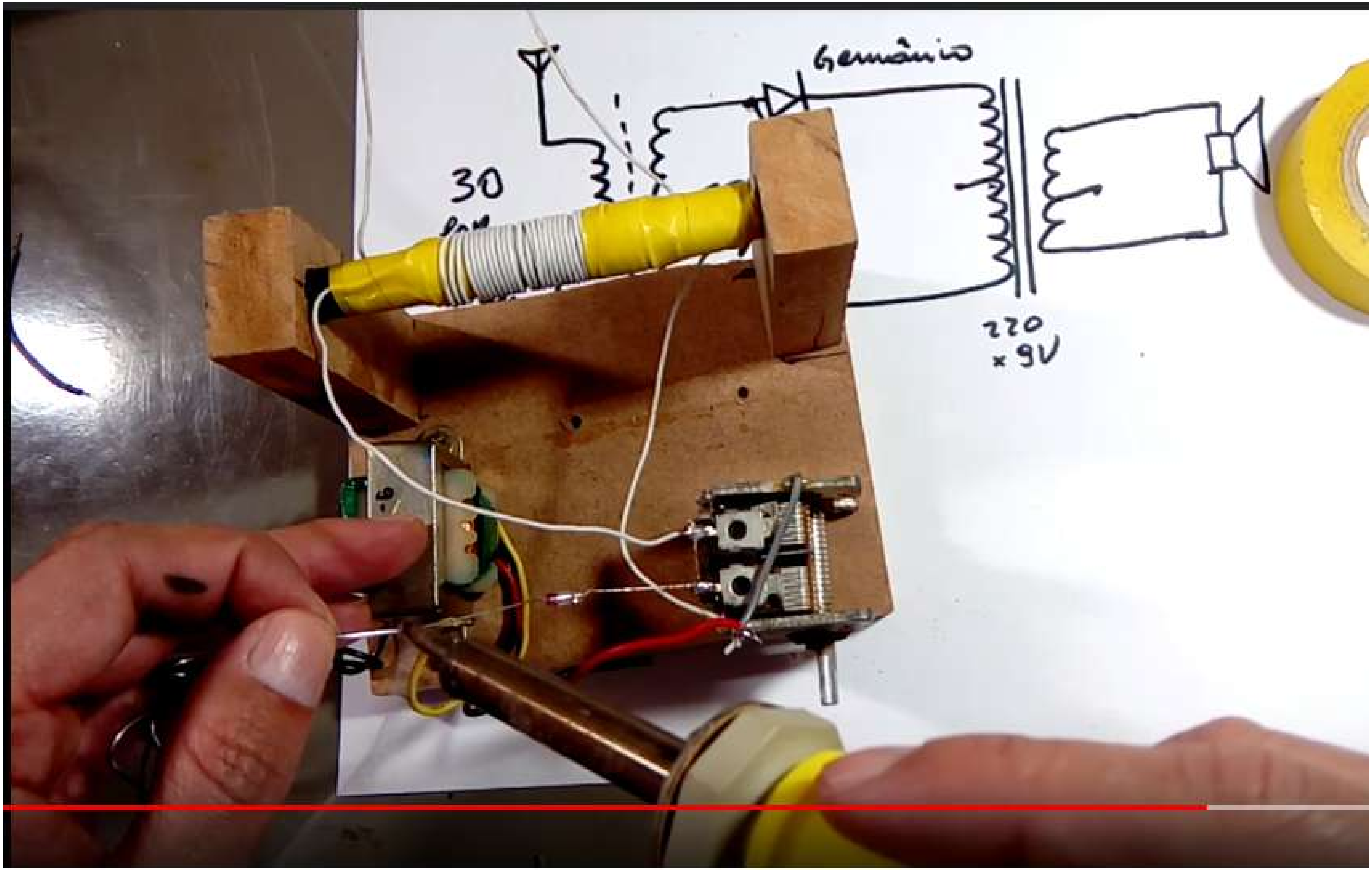
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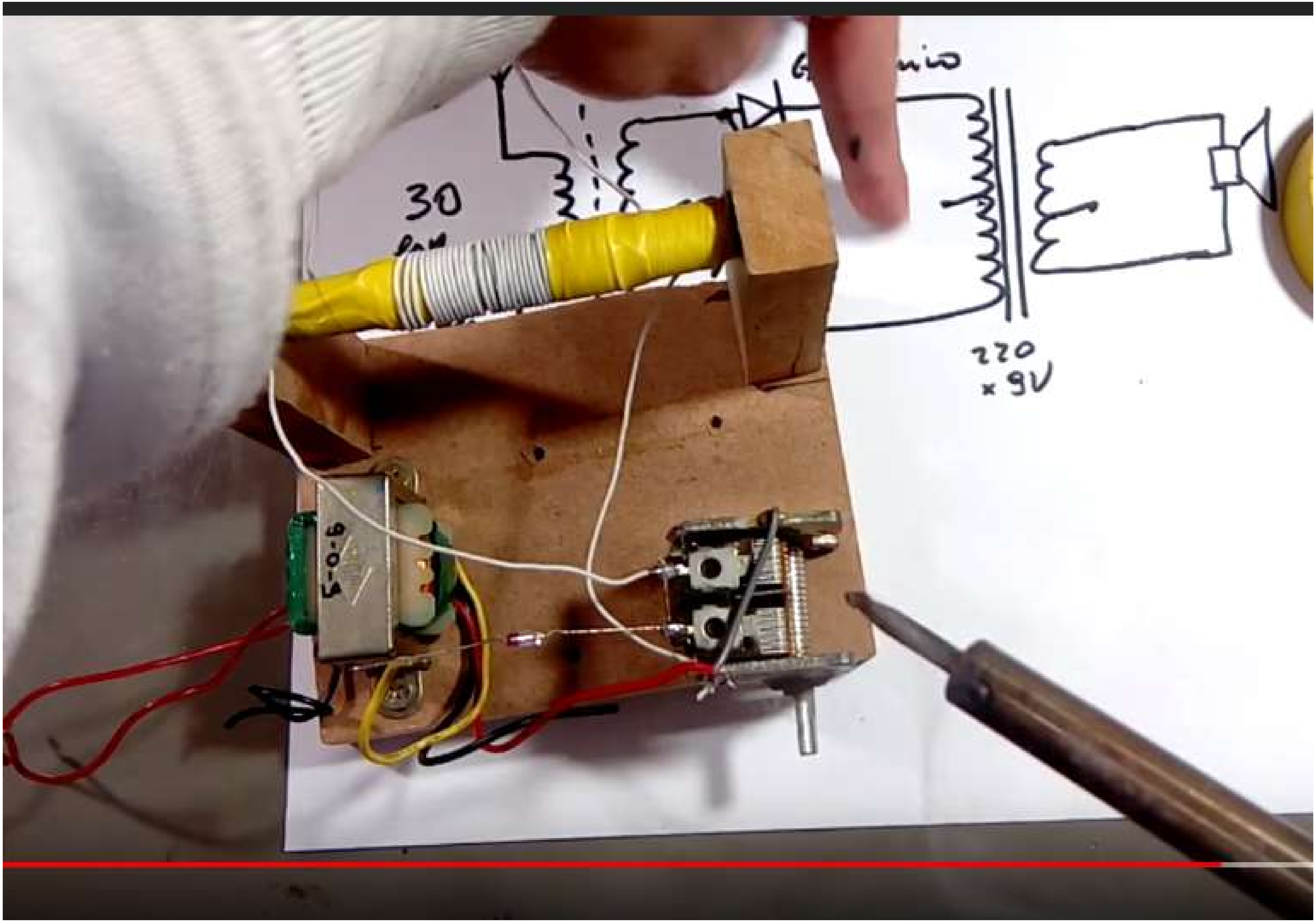
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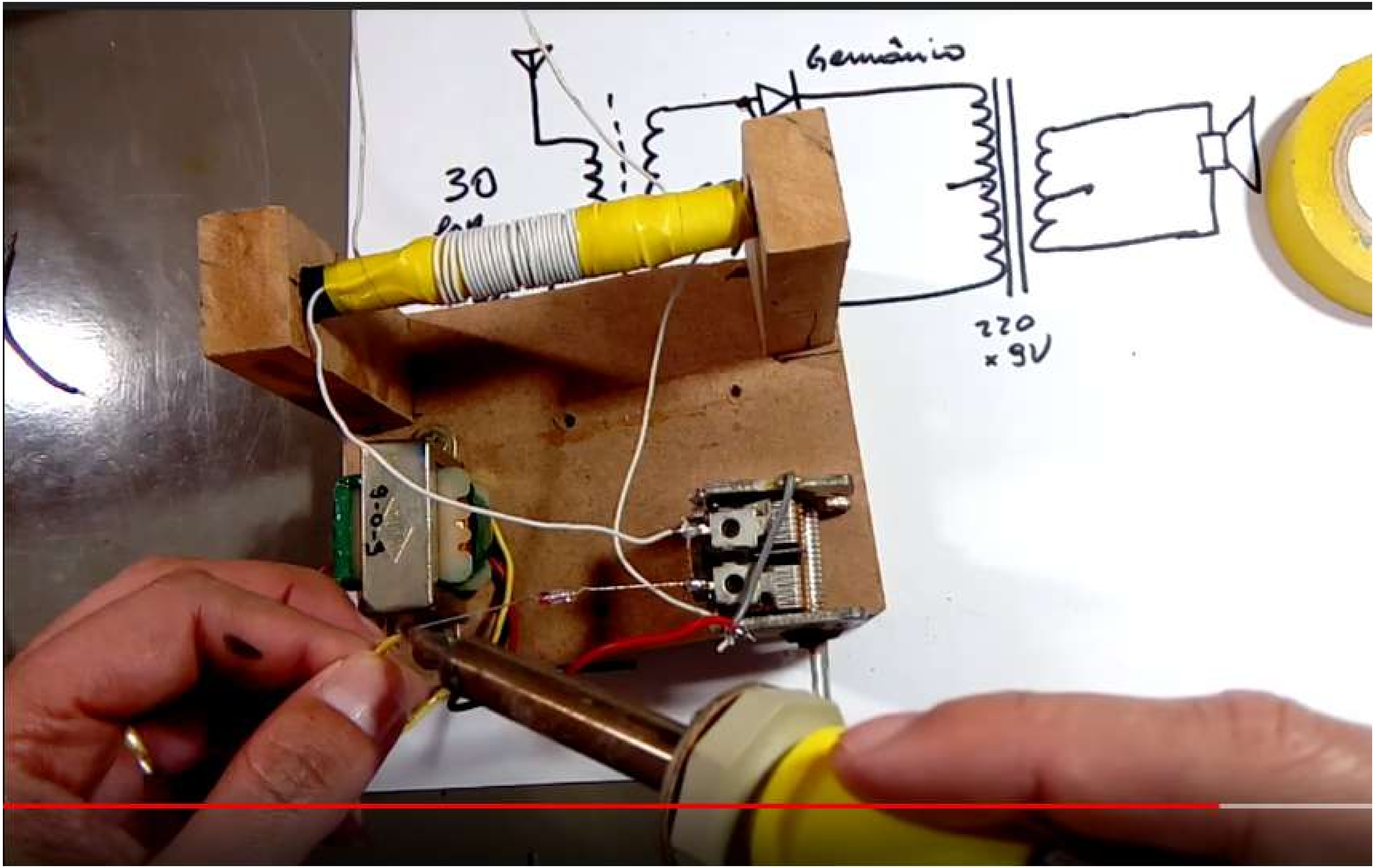
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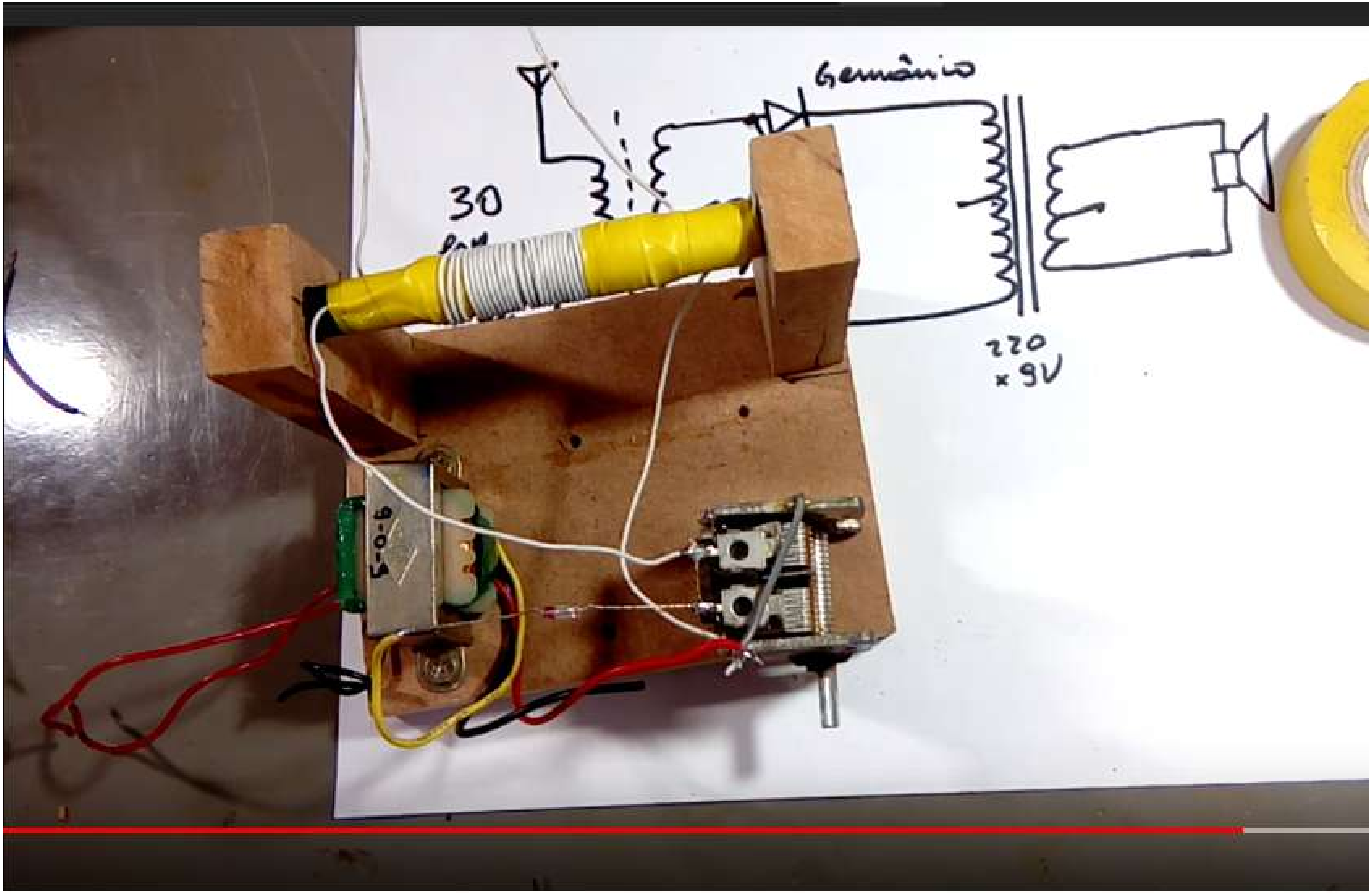
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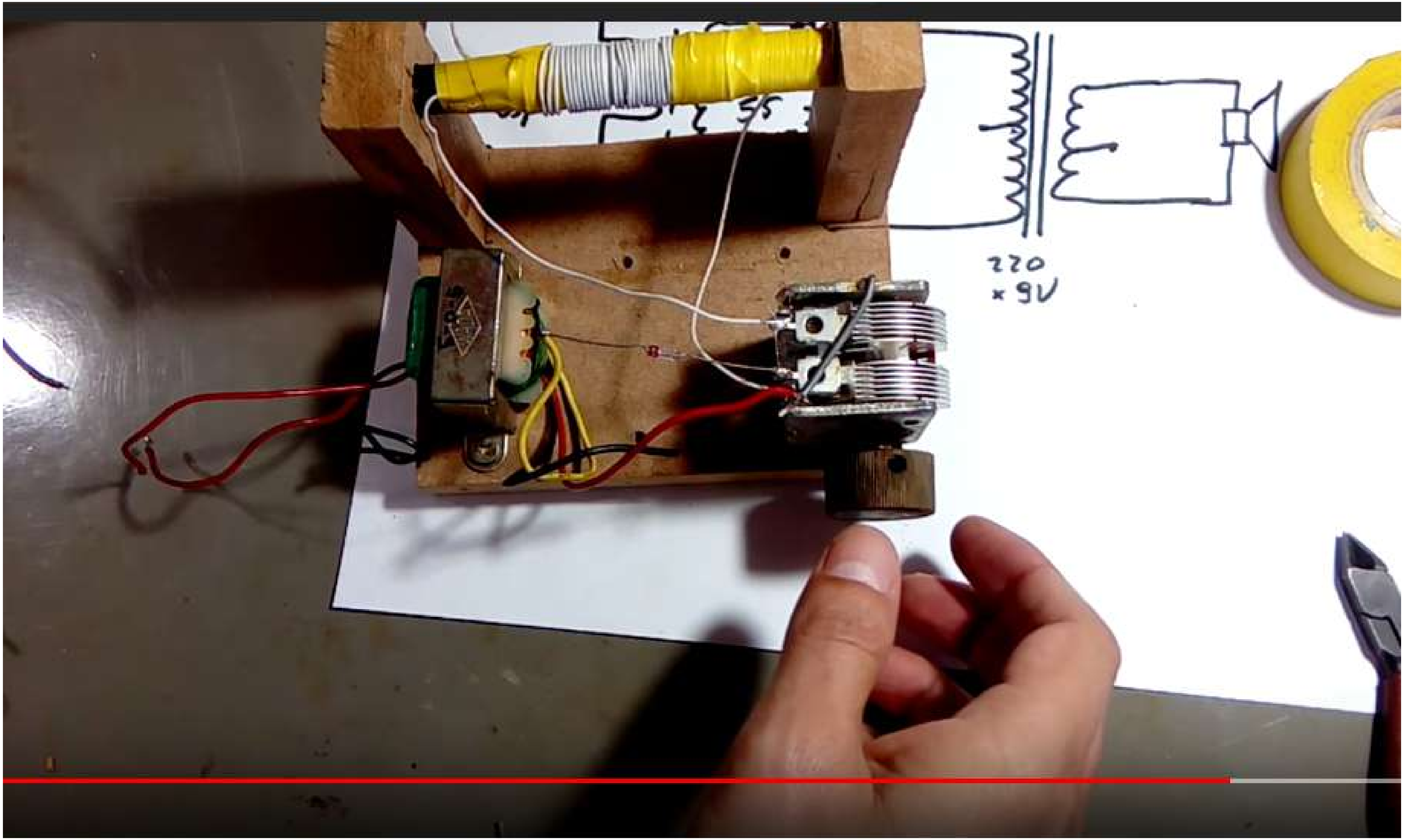
x 9V
9-0-9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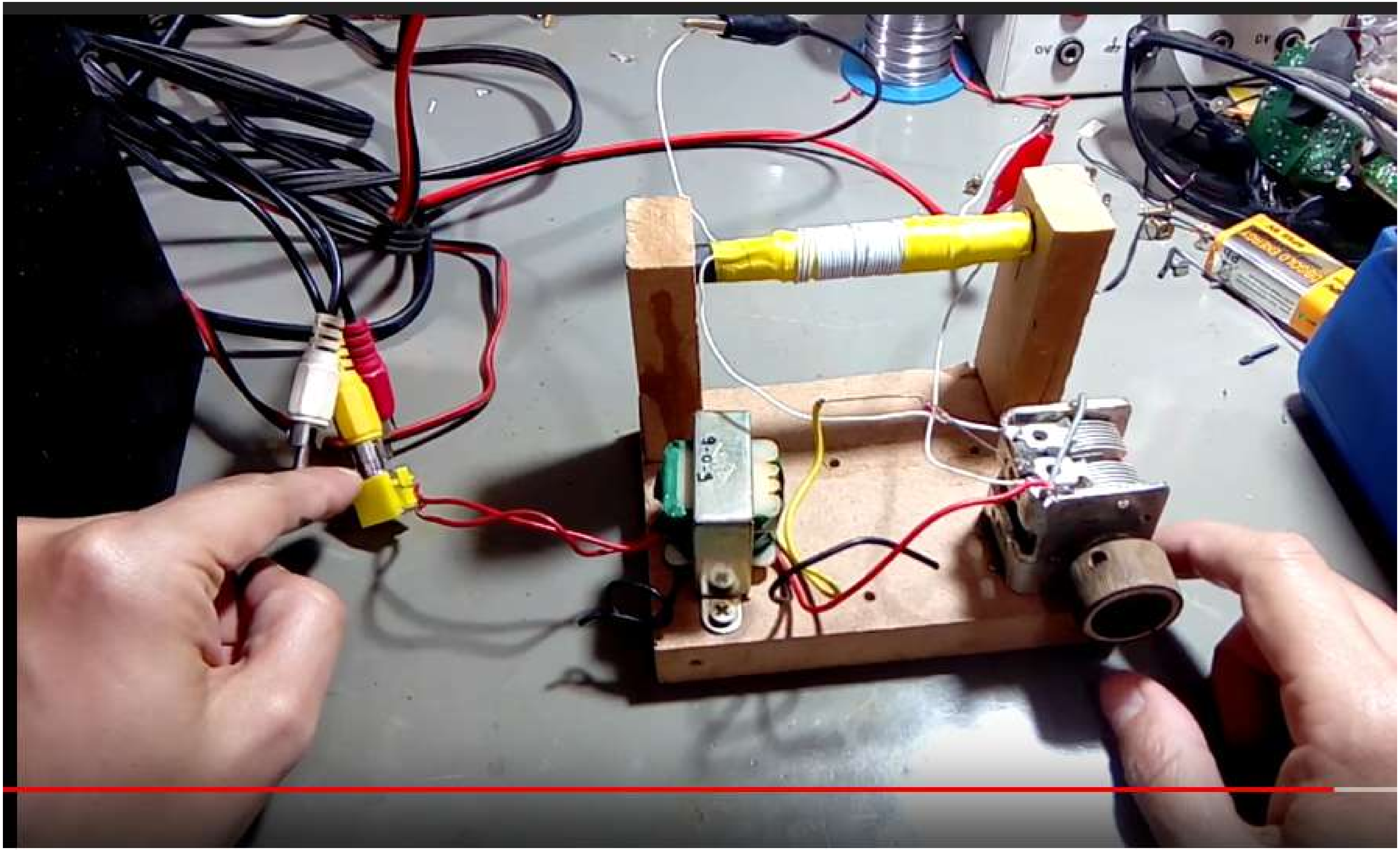
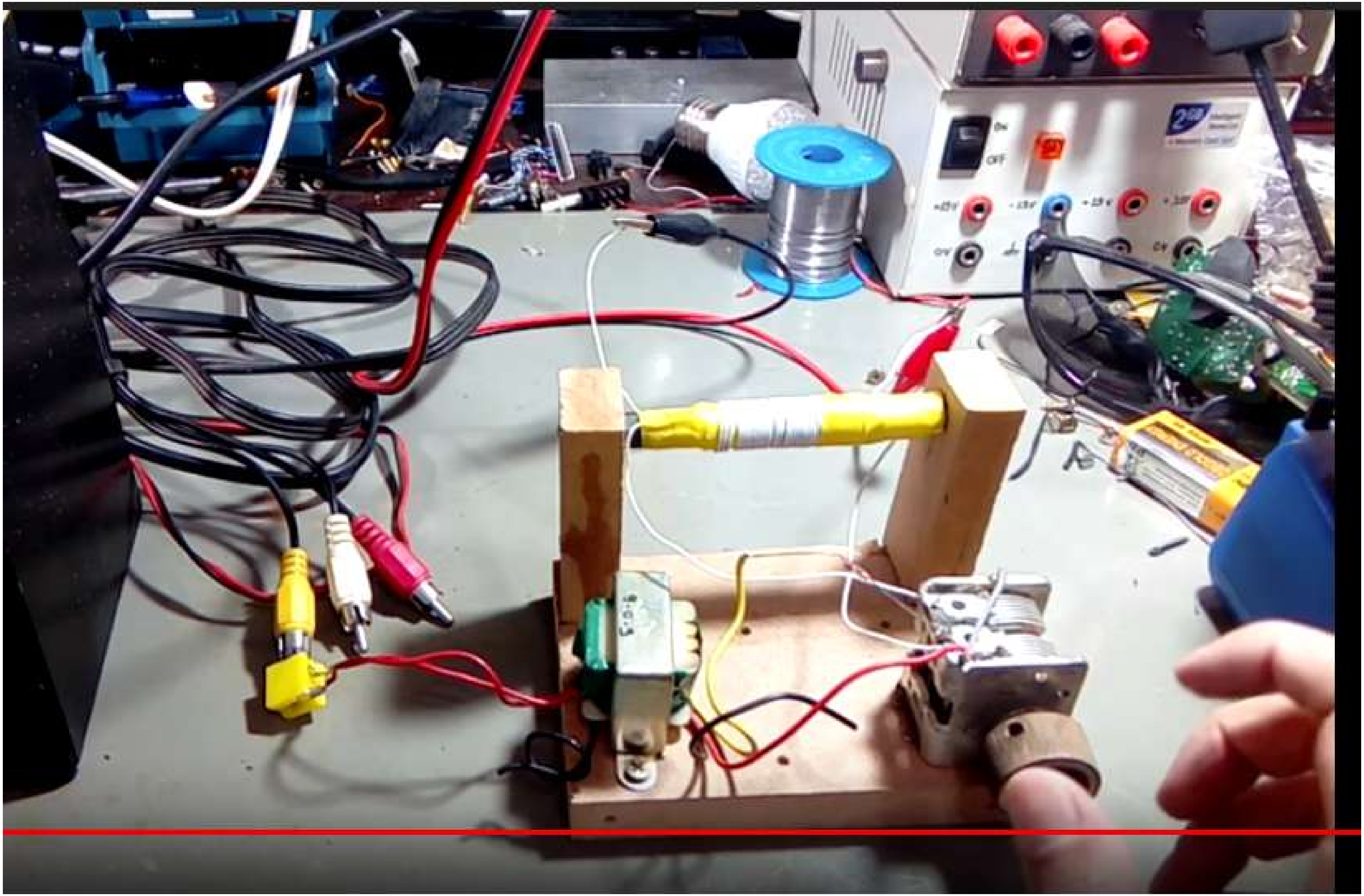
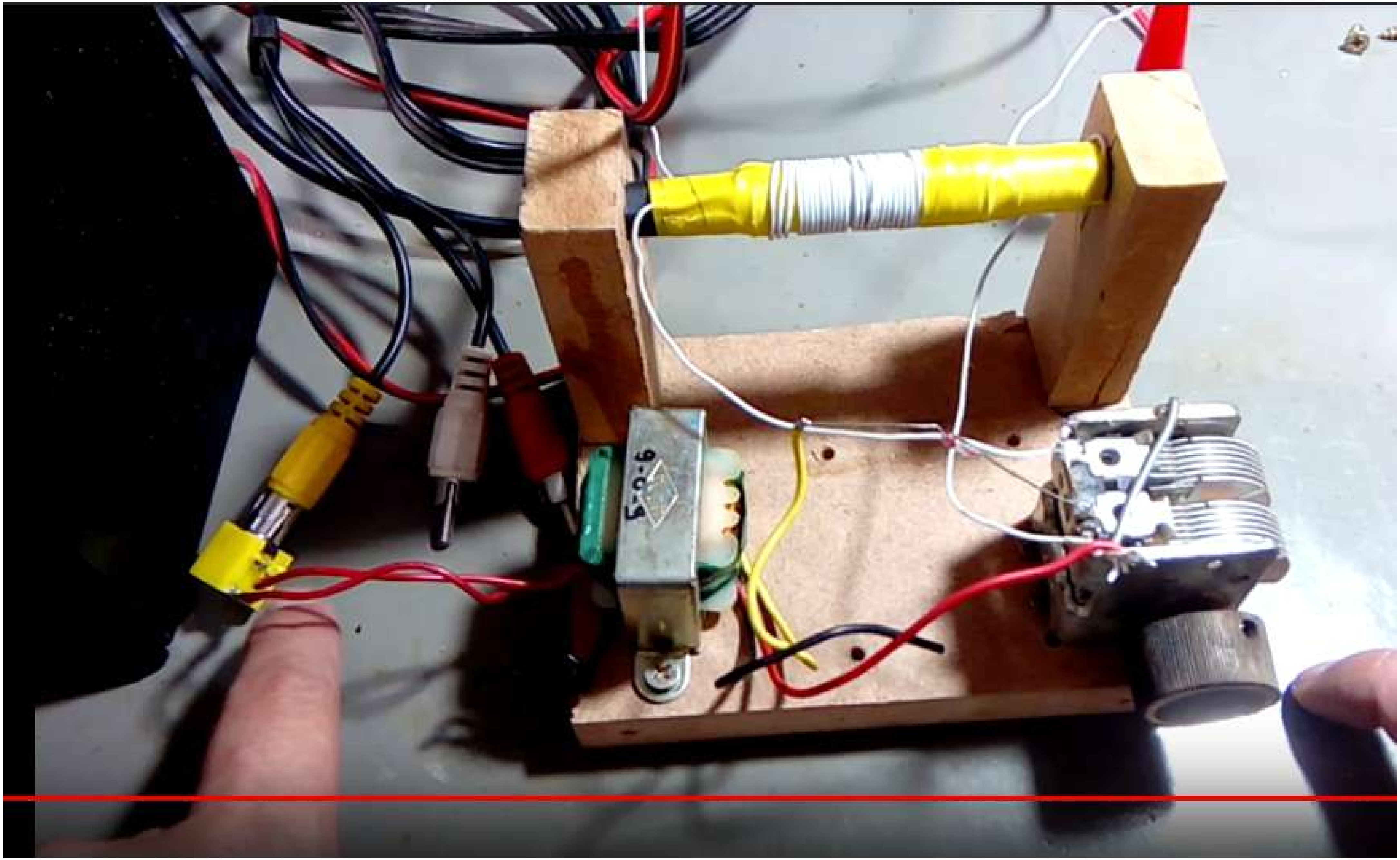
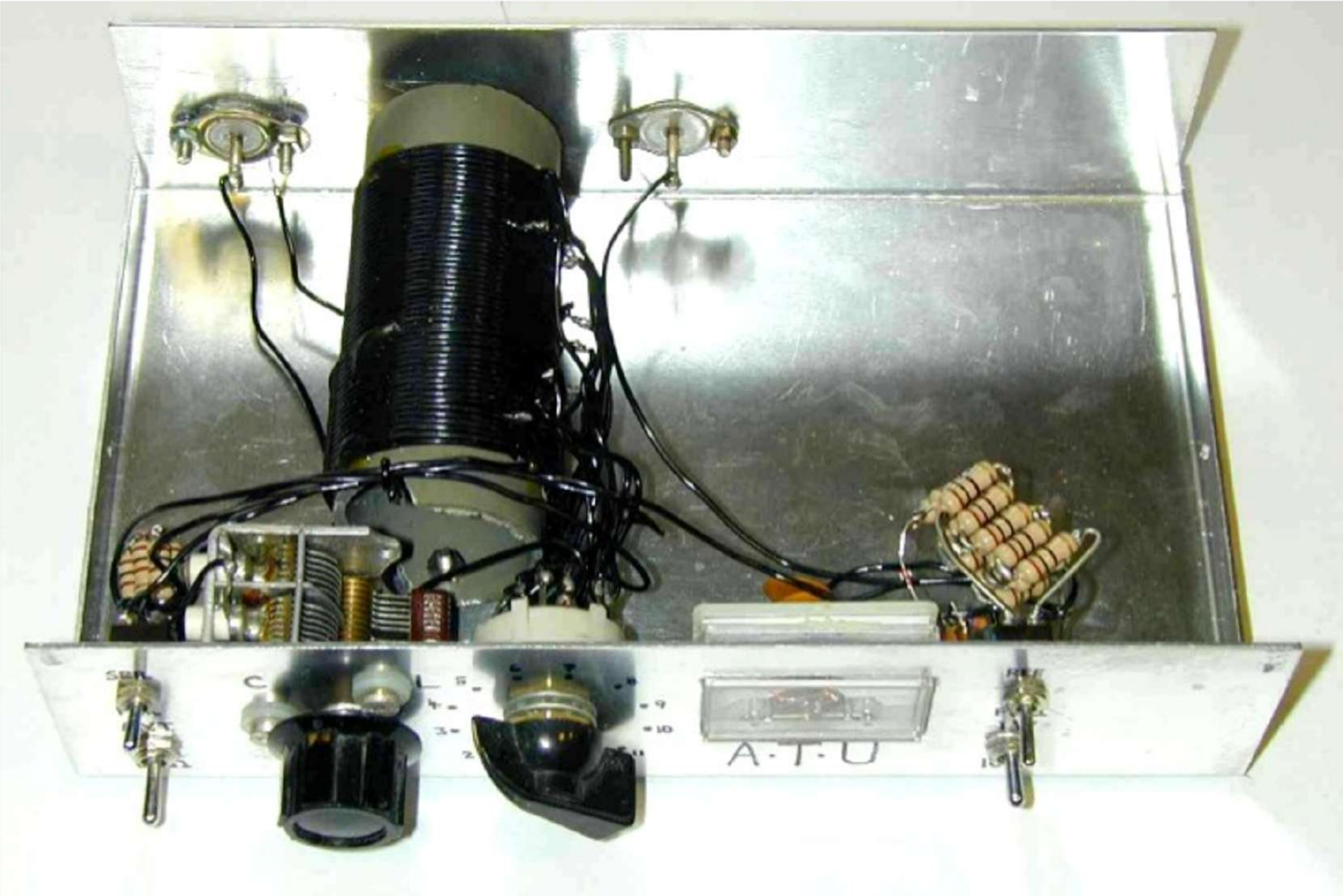






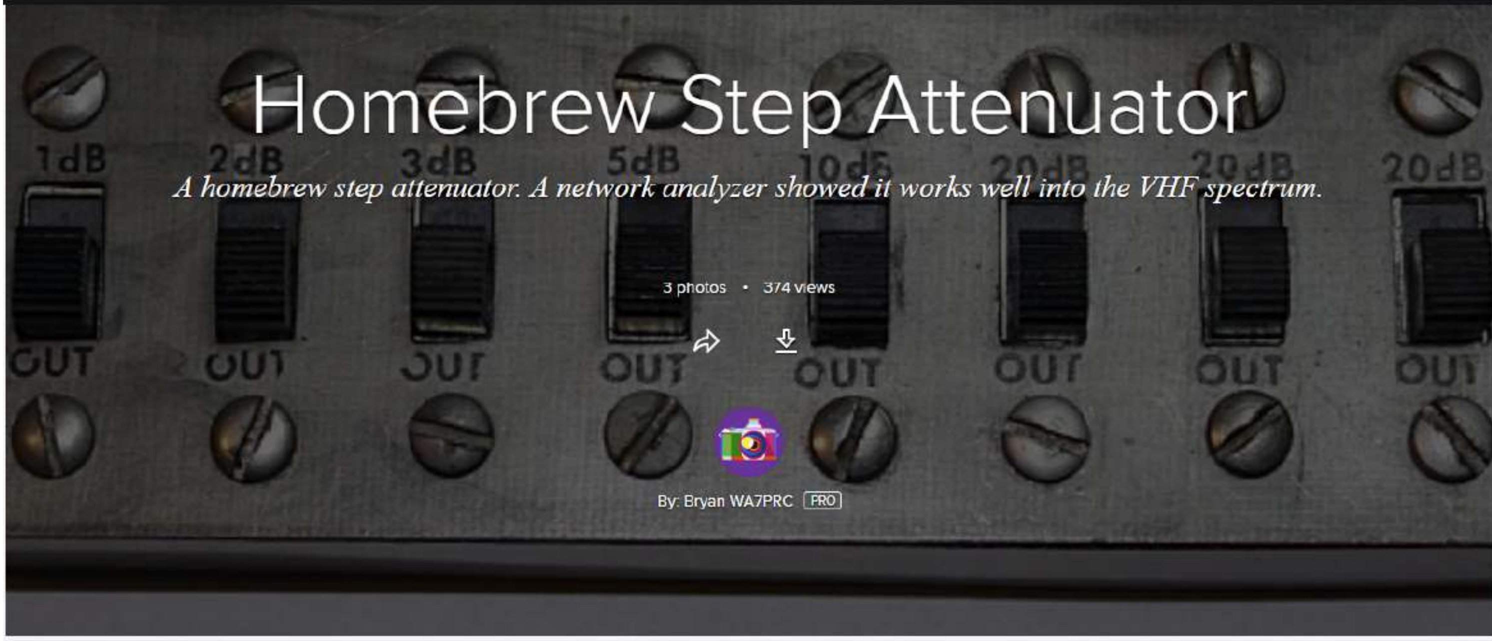

C
L
A·T·U

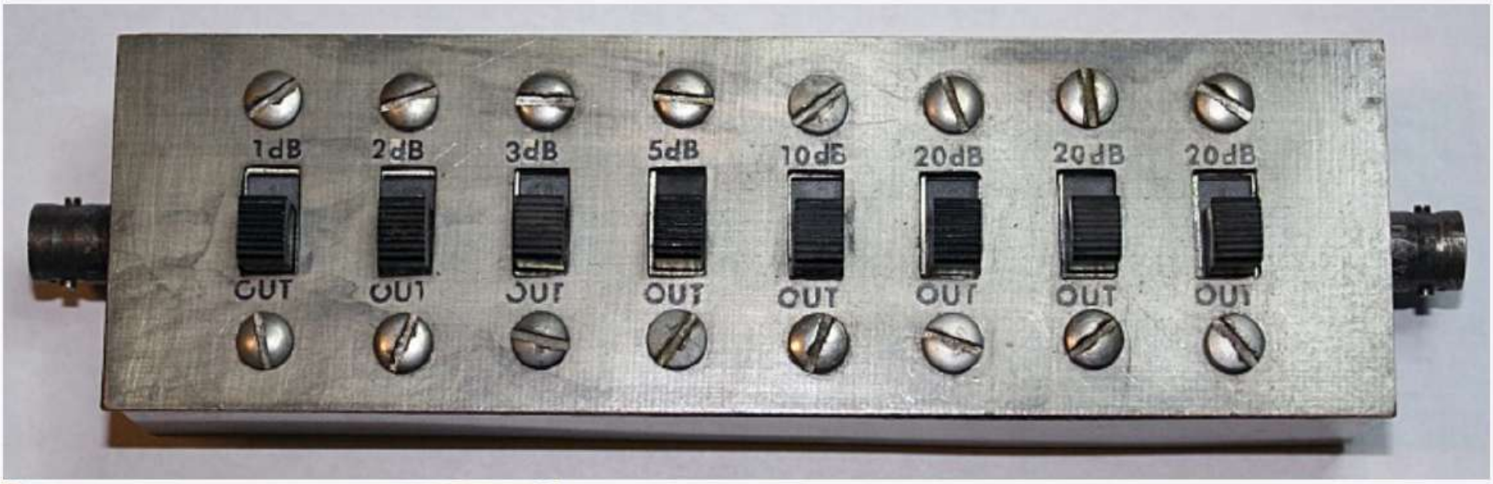
Homebrew Step Attenuator

A homebrew step attenuator. A network analyzer showed it works well into the VHF spectrum.

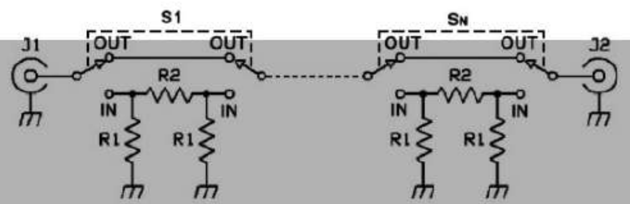
3 photos • 374 views

By: Bryan WA7PRC PRO

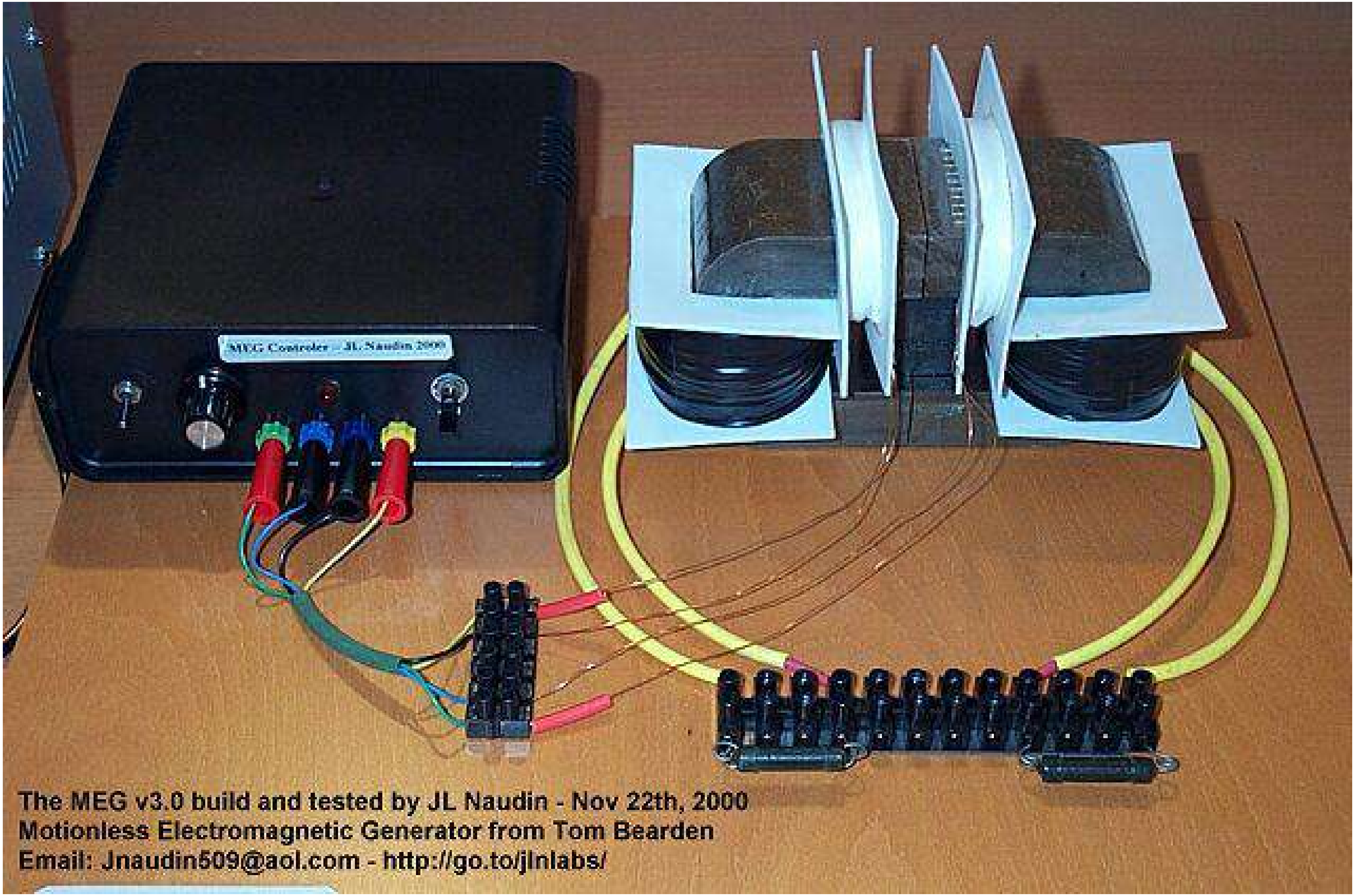


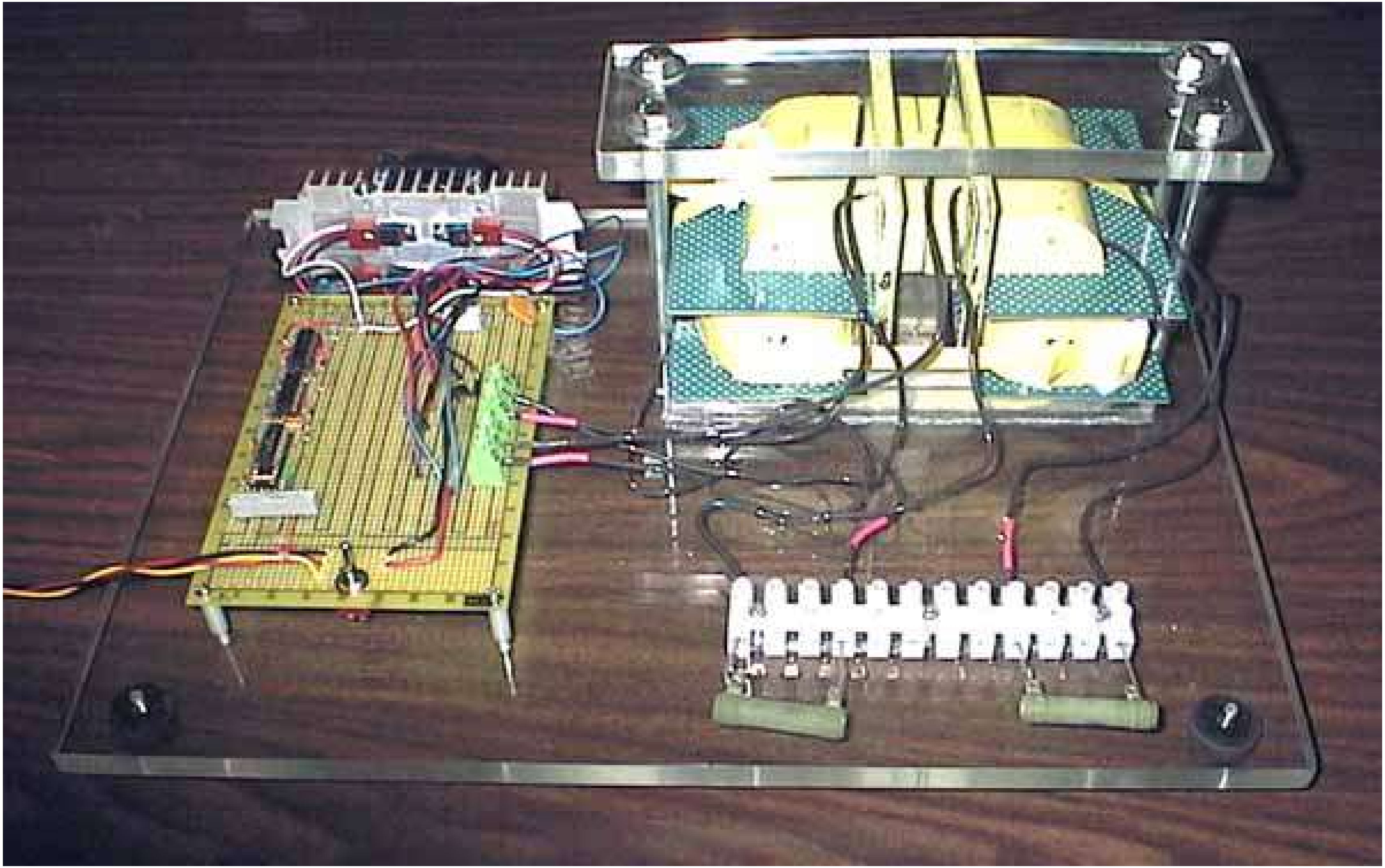


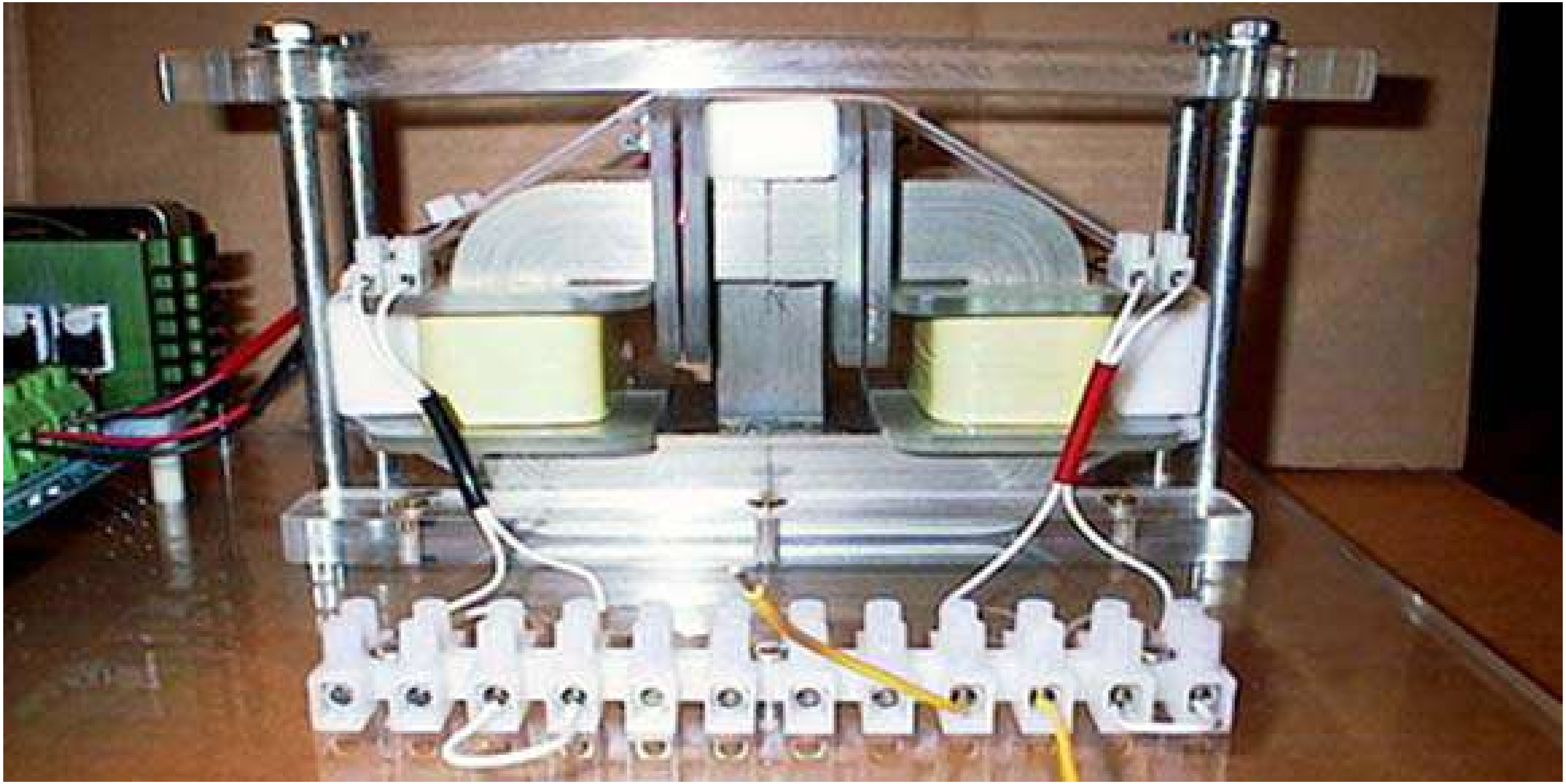
50-OHM STEP ATTENUATOR

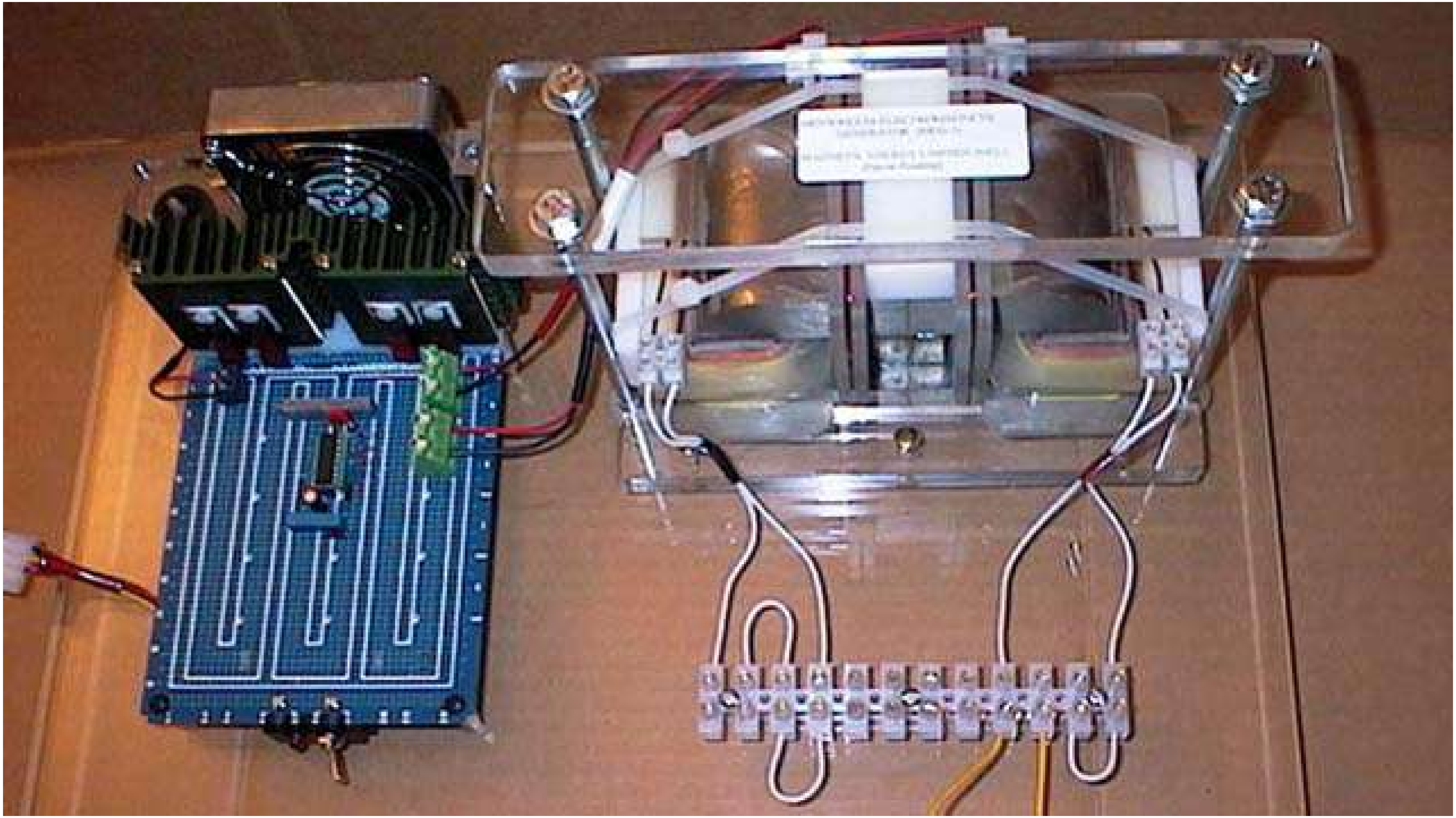


50Ω ATTEN	CALCULATED VALUES R1	CALCULATED VALUES R2	1% RESISTORS (E48) R1	1% RESISTORS (E48) R2	5% RESISTORS (E24) R1	5% RESISTORS (E24) R2
1dB	869Ω	5.8Ω	887Ω	5.6Ω	910Ω	5.6Ω
2dB	436Ω	12Ω	453Ω	12.0Ω	470Ω	12Ω
3dB	294Ω	18Ω	294Ω	18.0Ω	300Ω	18Ω
5dB	178Ω	30Ω	178Ω	30.1Ω	200Ω	33Ω
10dB	96Ω	71Ω	95.3Ω	71.5Ω	100Ω	75Ω
20dB	61Ω	248Ω	61.9Ω	249Ω	62Ω	270Ω


MEG Controler - JL Naudin 2000
The MEG v3.0 build and tested by JL Naudin - Nov 22th, 2000
Motionless Electromagnetic Generator from Tom Bearden
Email: Jnaudin509@aol.com - http://go.to/jlnlabs/



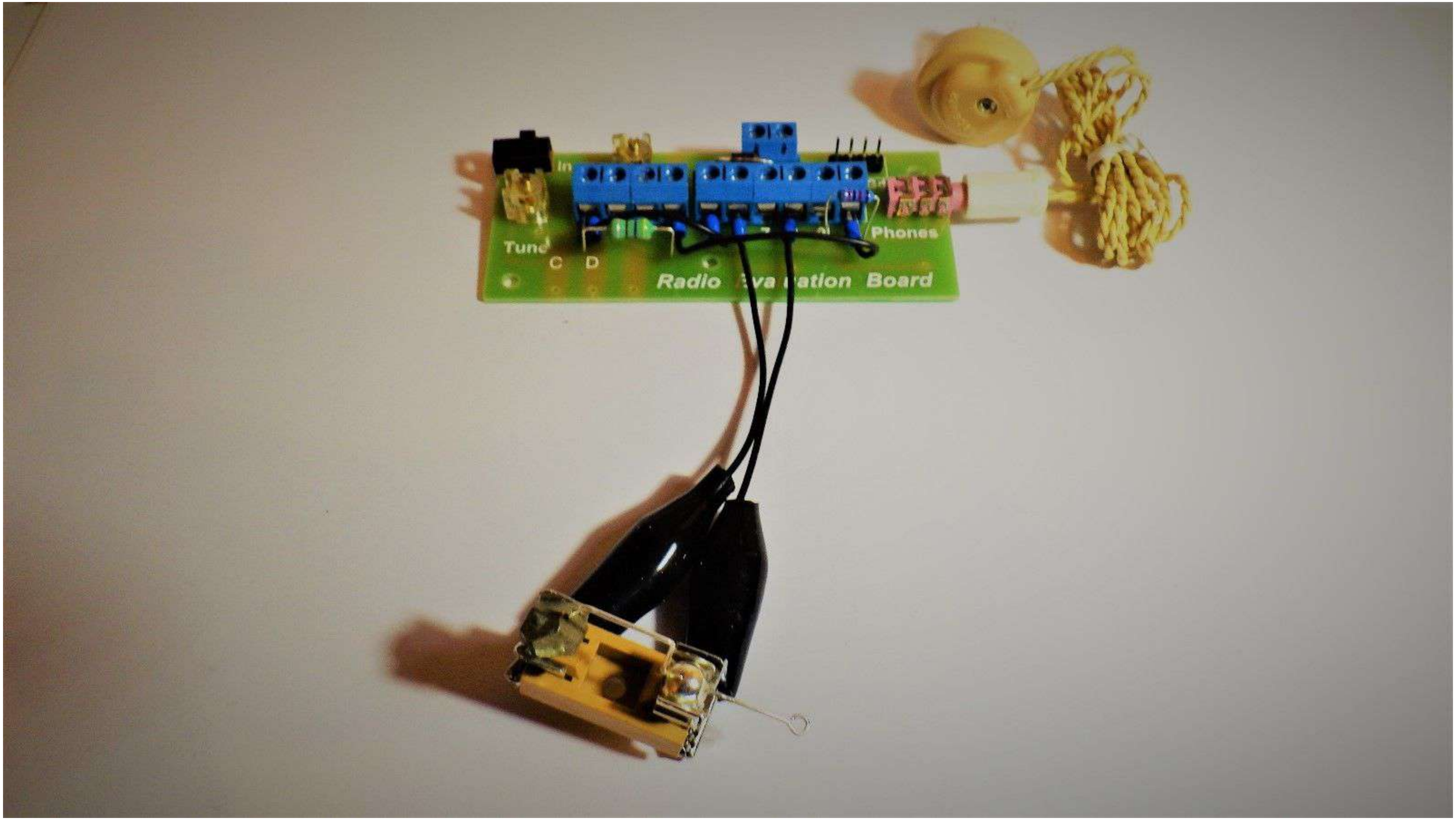




In
VCC In Gd Gd
1 2 3 4 5 6 7 8 9 10 Phones
Tune
C D
Radio Evaluation Board


In
Tune
C D
1 2 3 4 5 6 7 8 9 10 Phones
Radio Evaluation Board


In
VCC In Gd Gd
2 3
6
9
Phones
Tune
C D
Radio Evaluation Board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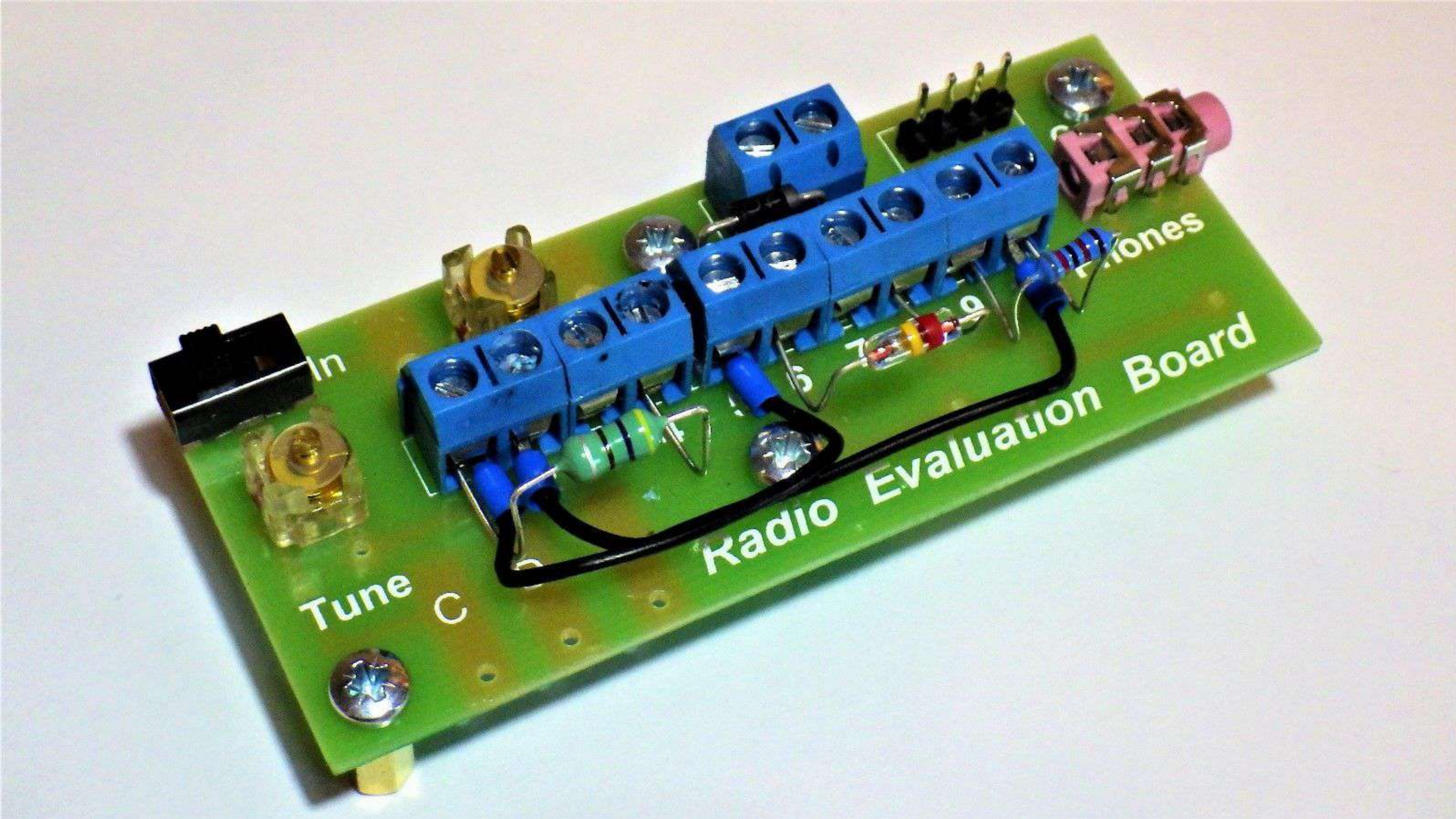
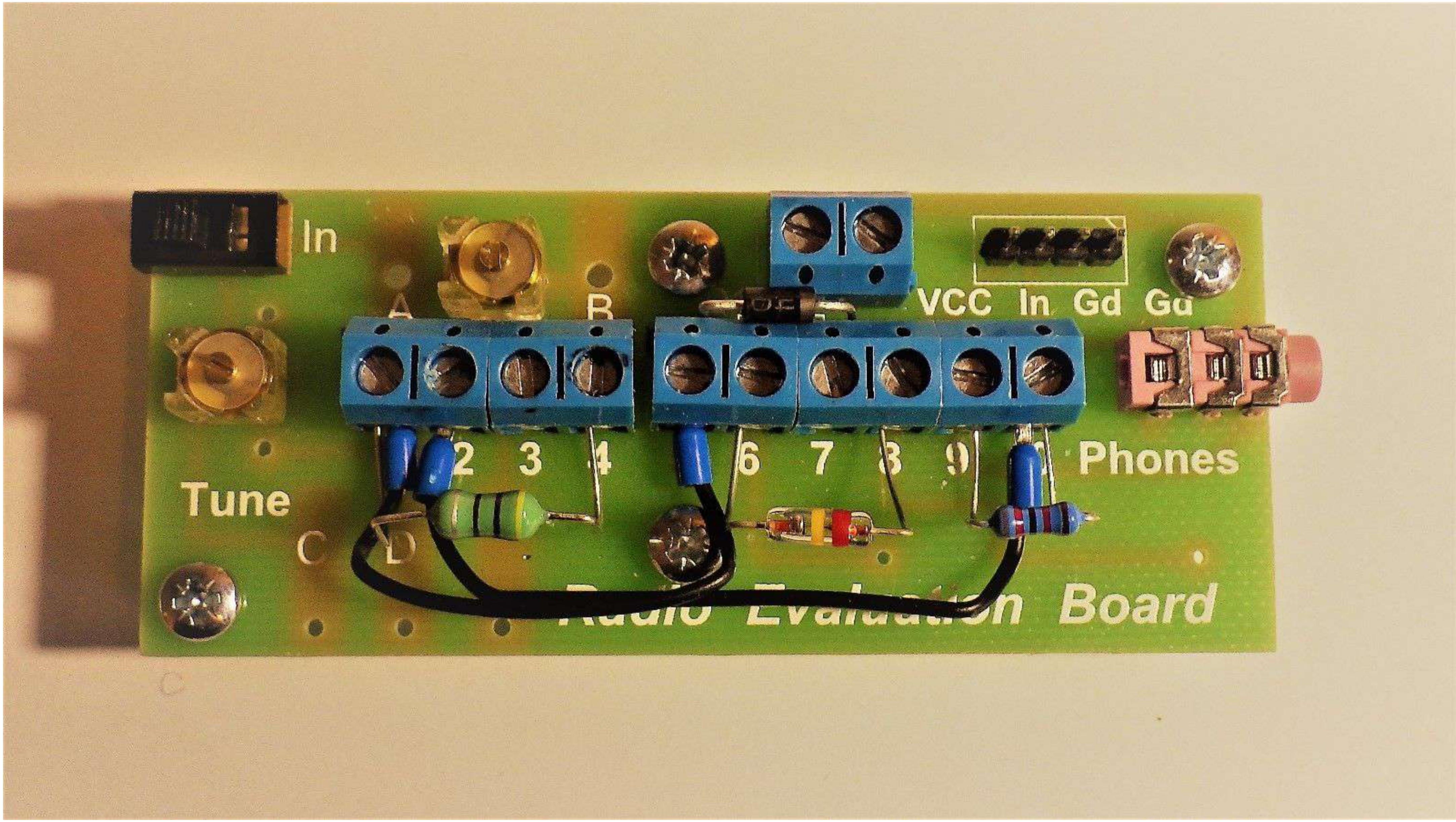
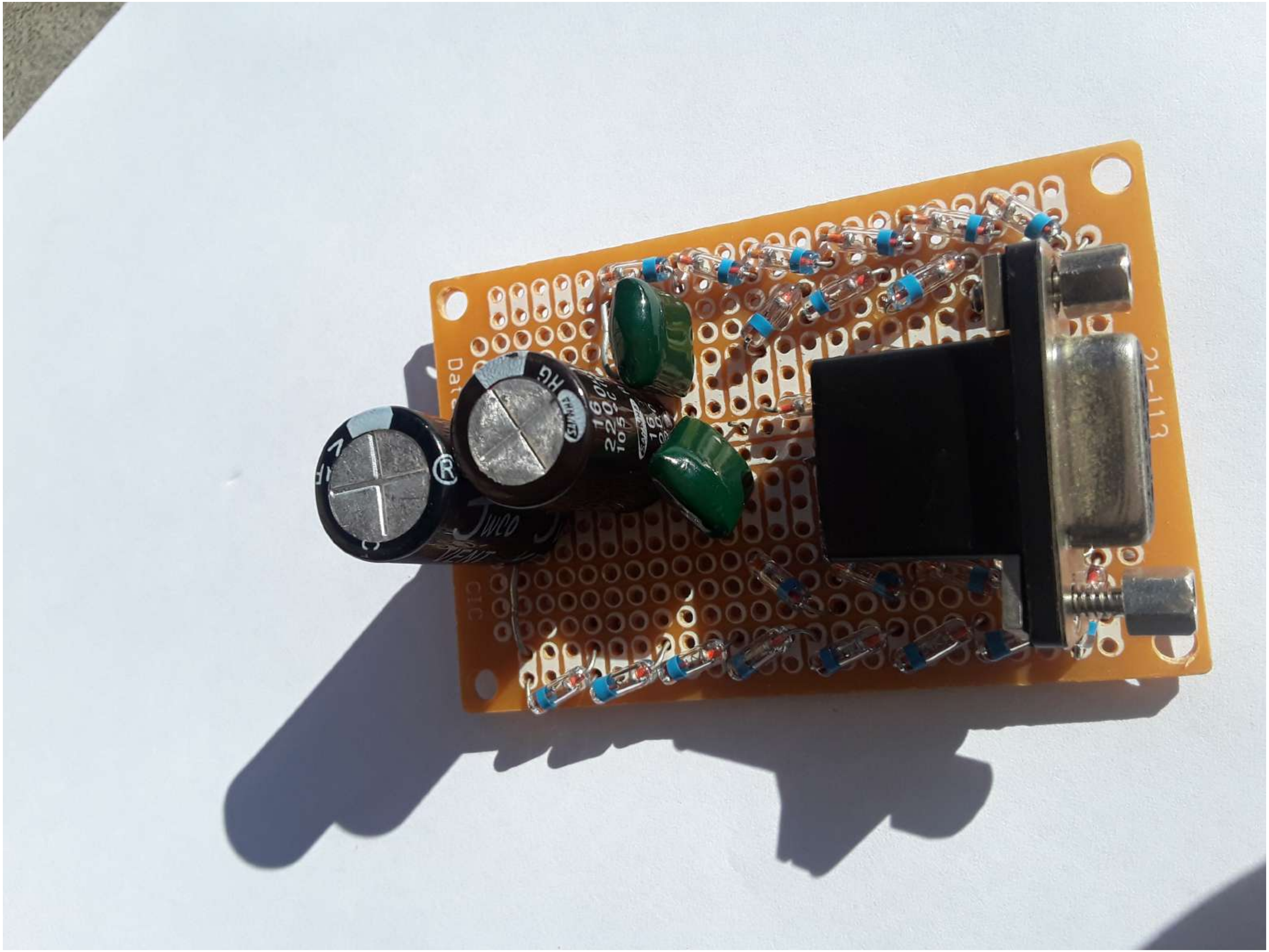
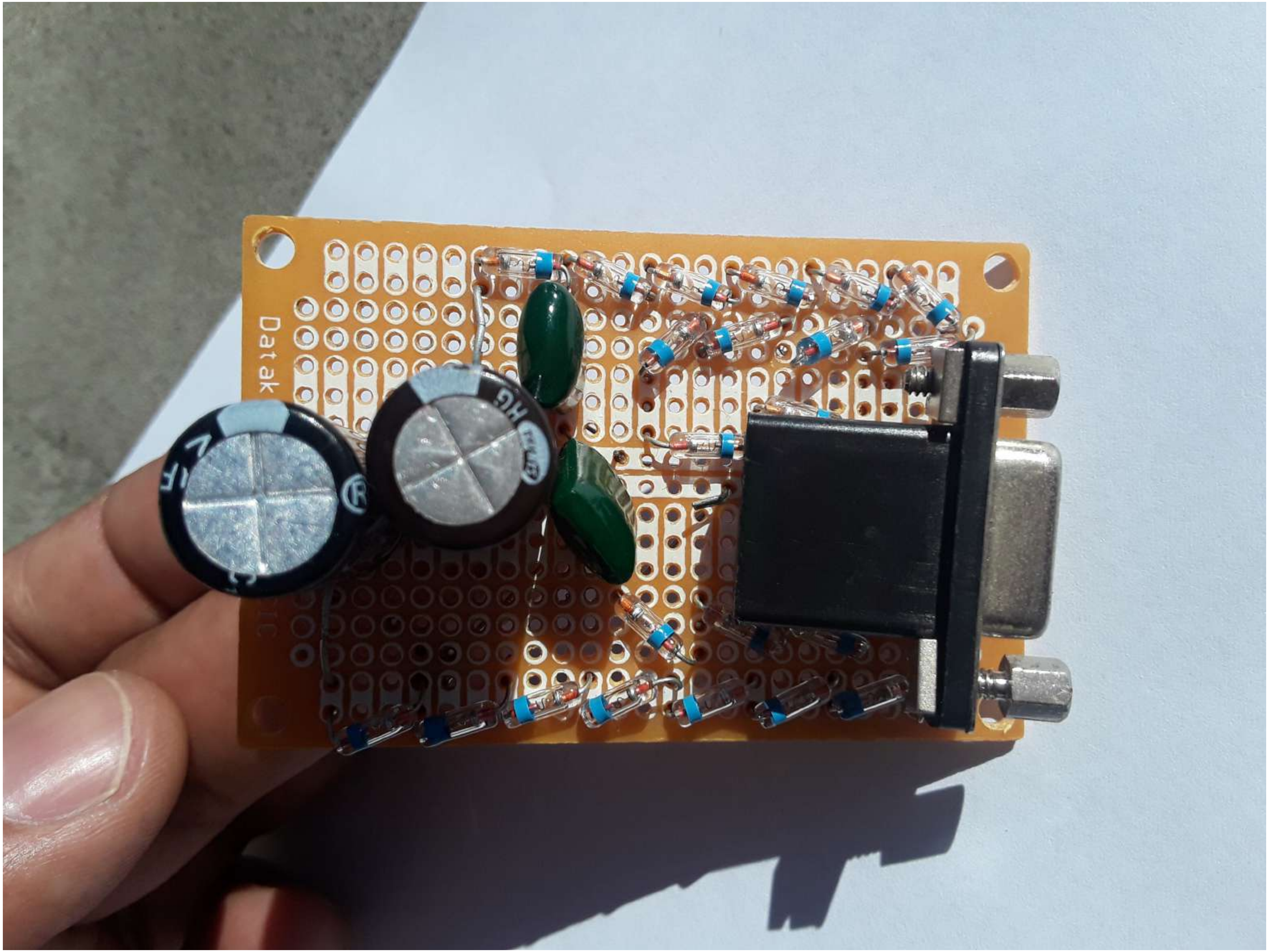
C D
Phones
Radio
Board



In
Tune
C
Phones
Radio Evaluation Board


In
A
B
VCC In Gd Gd
2 3 4
6 7 8 9
Phones
Tune
C
D
Board

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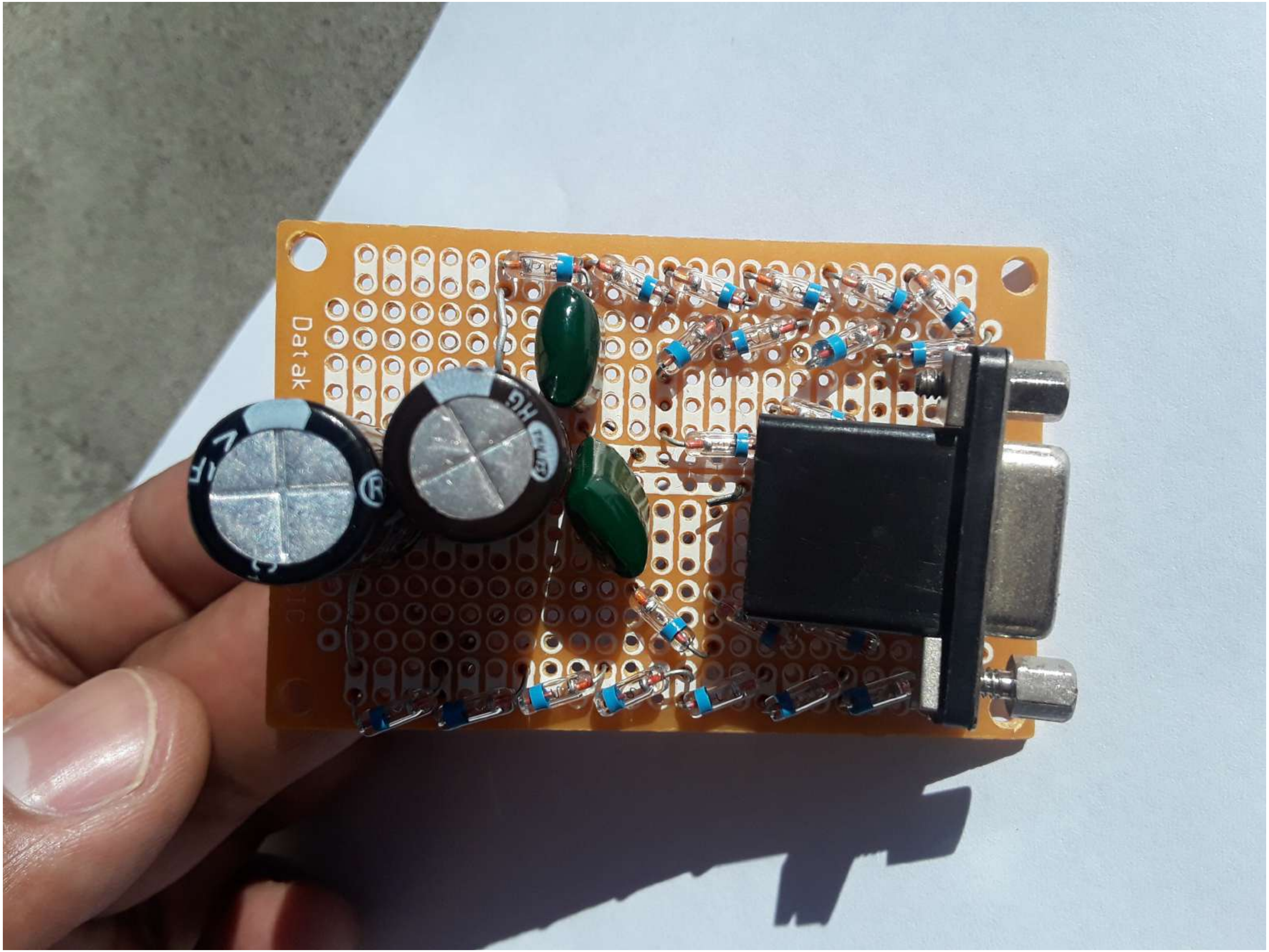
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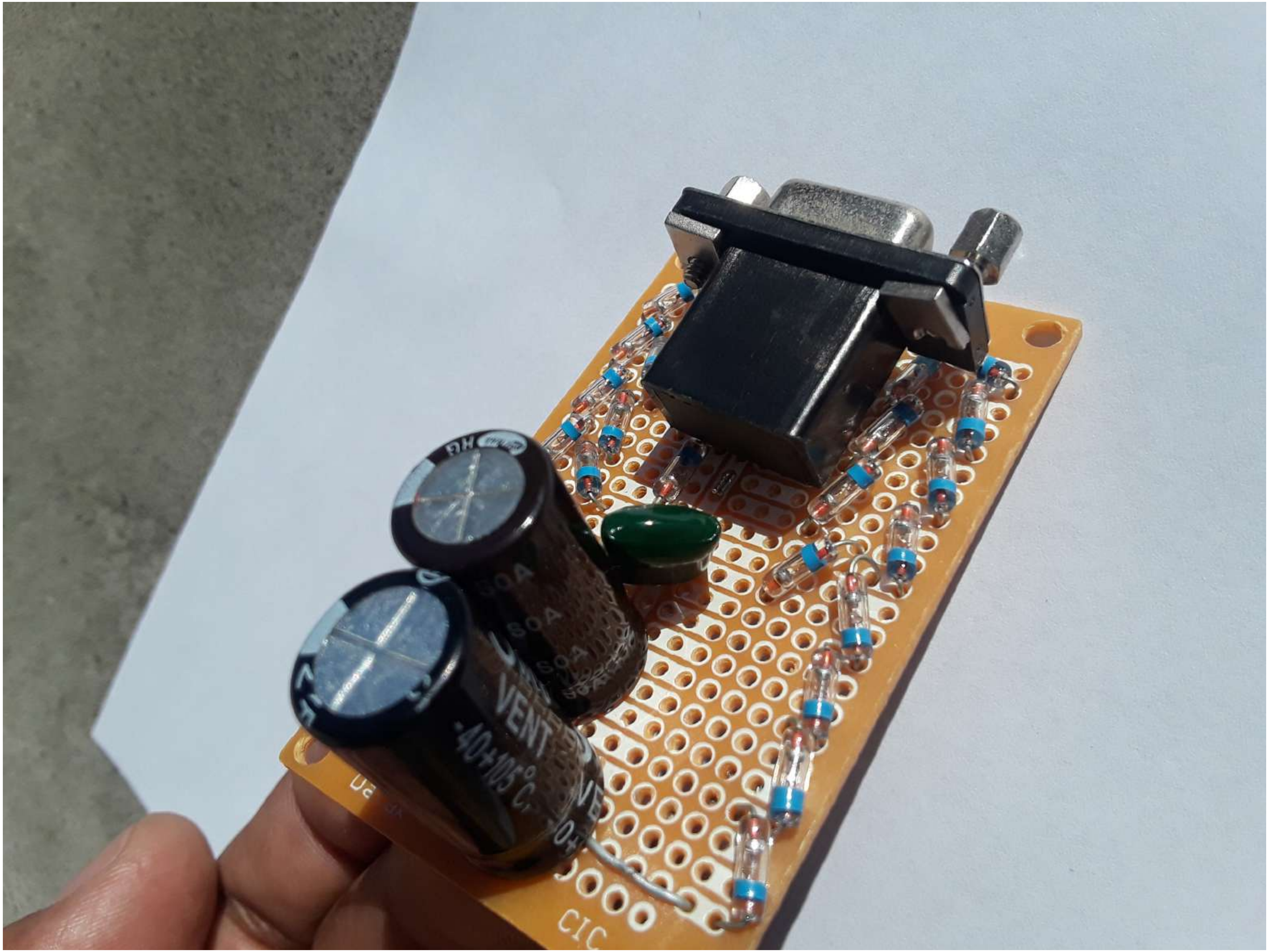
VENT
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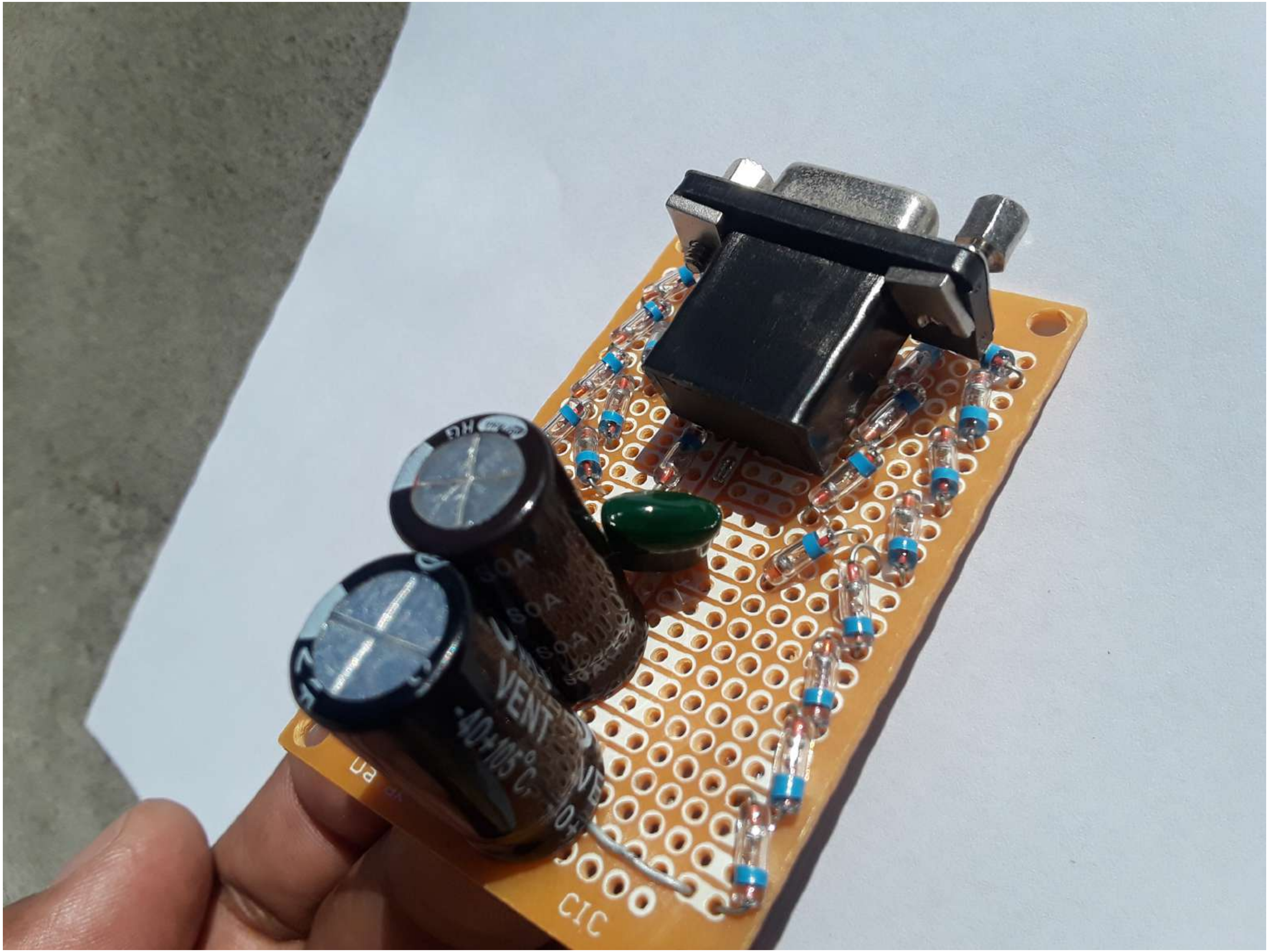
VENT
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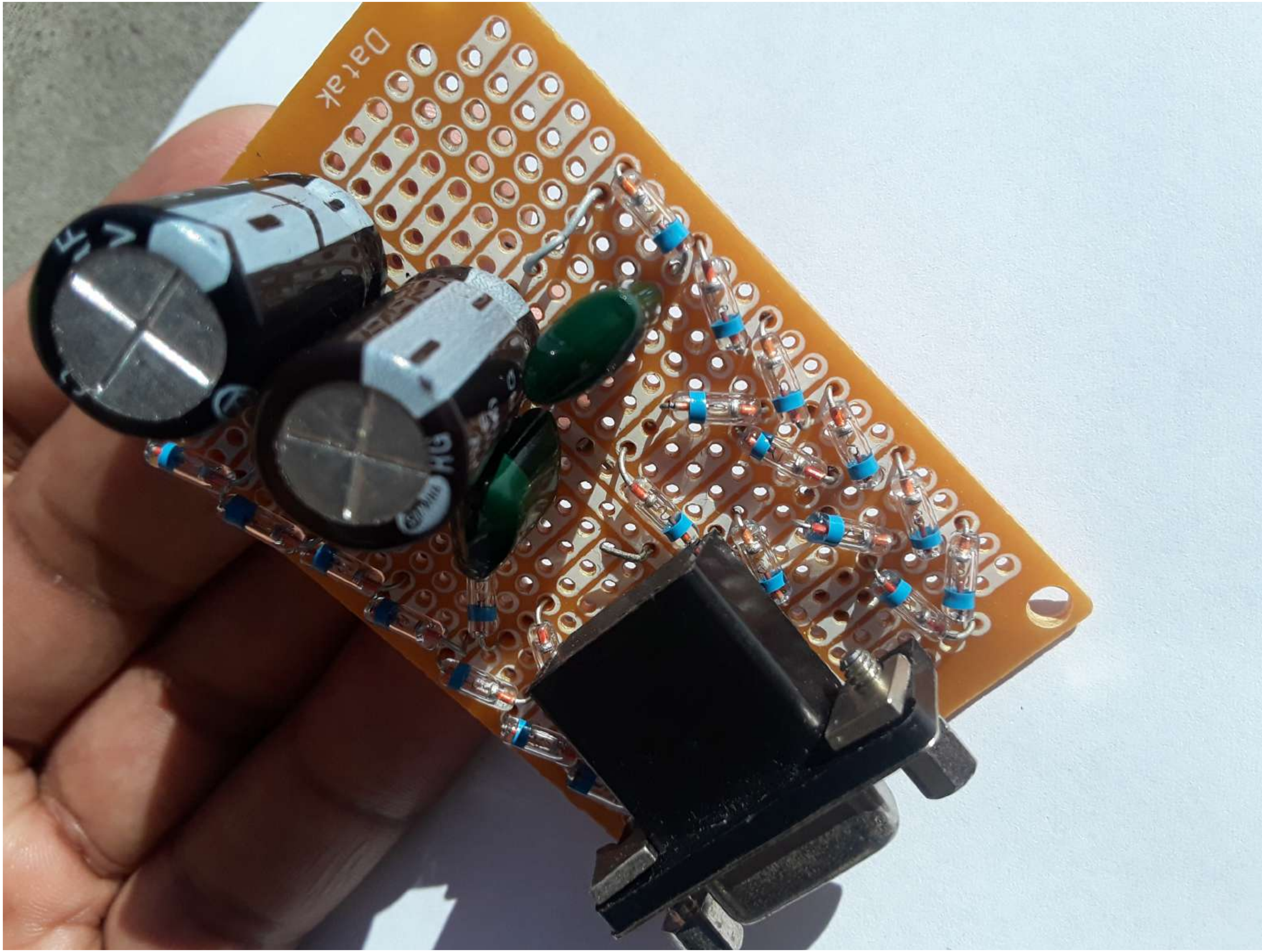
CIC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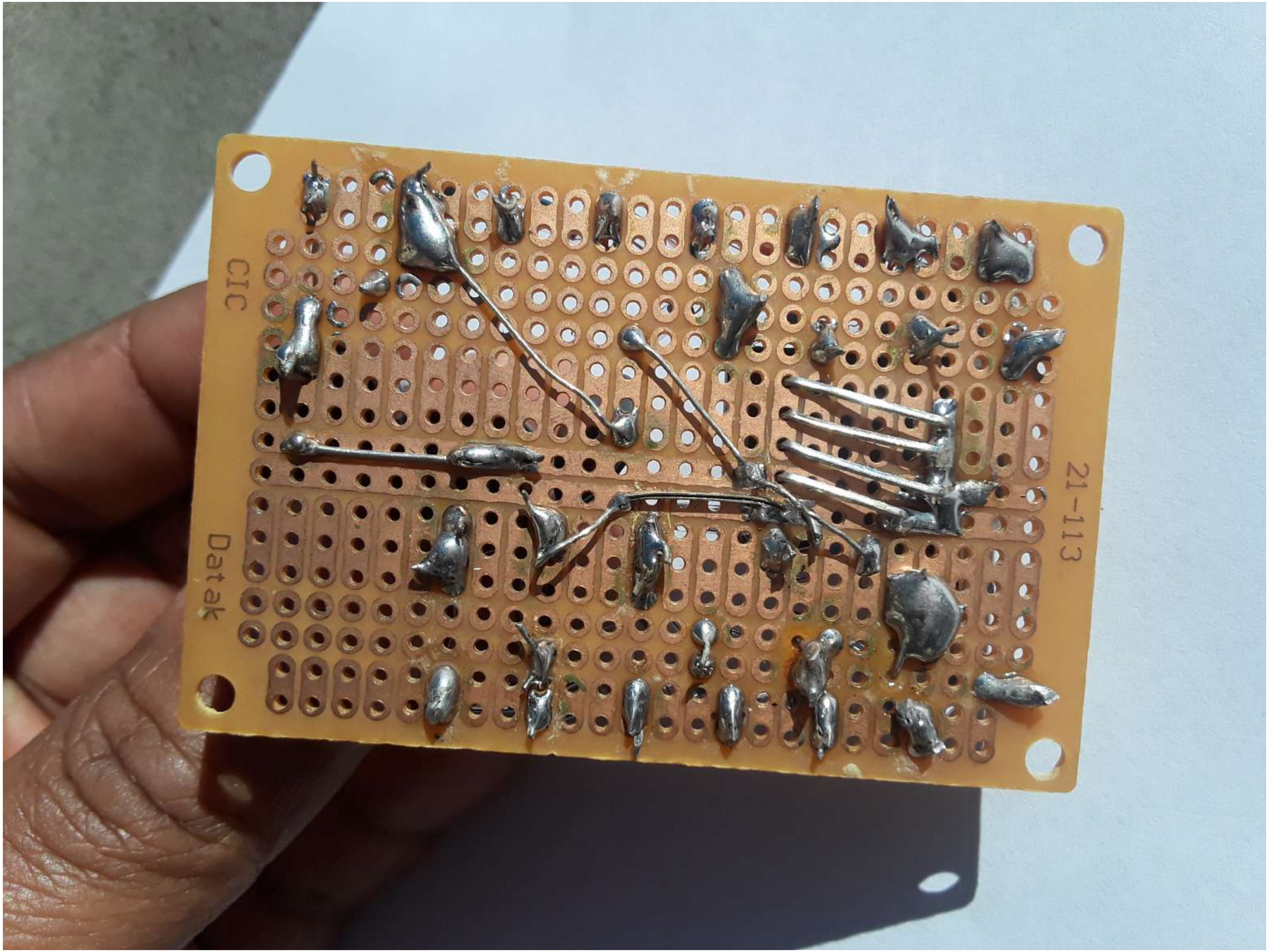
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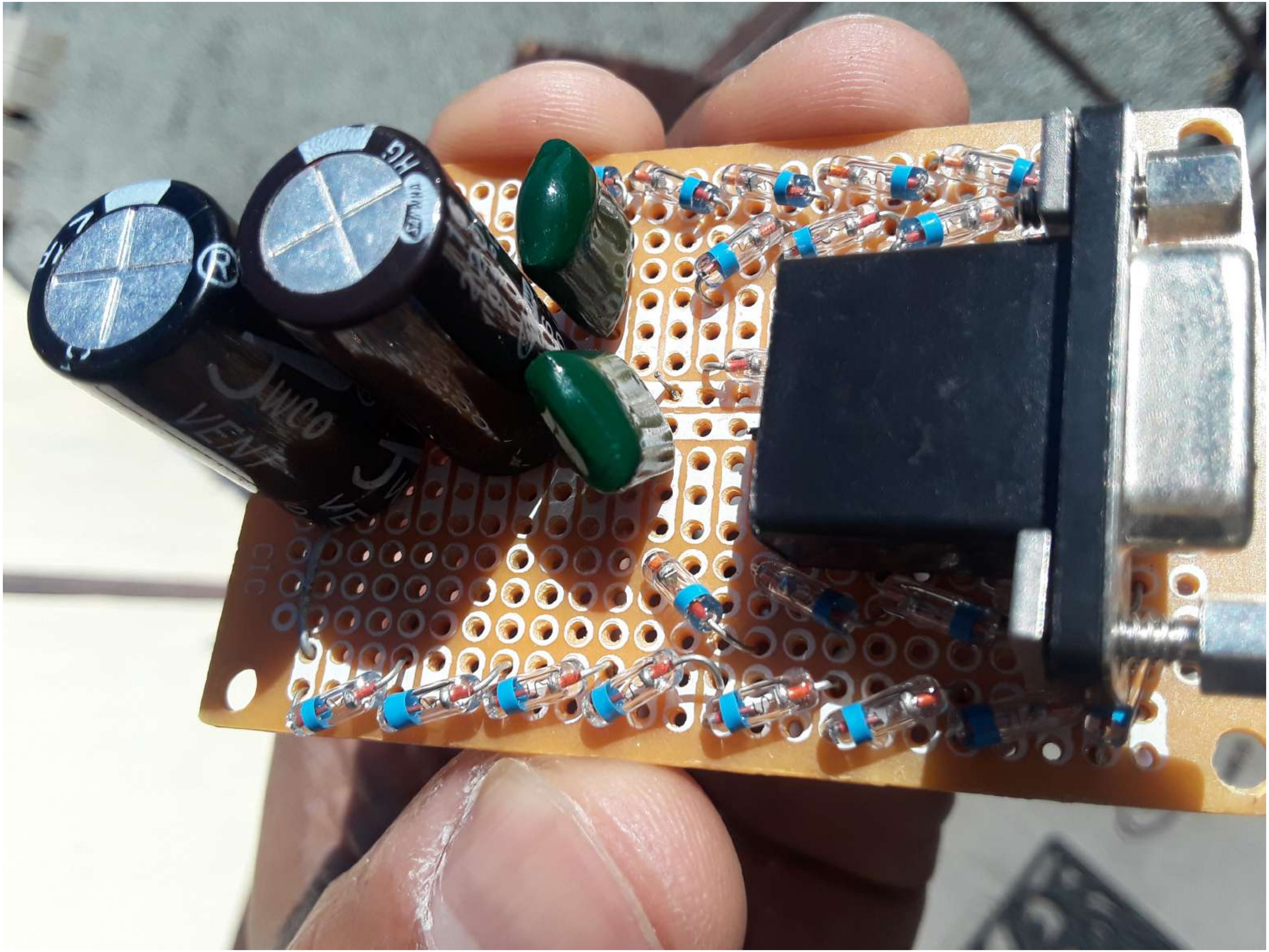
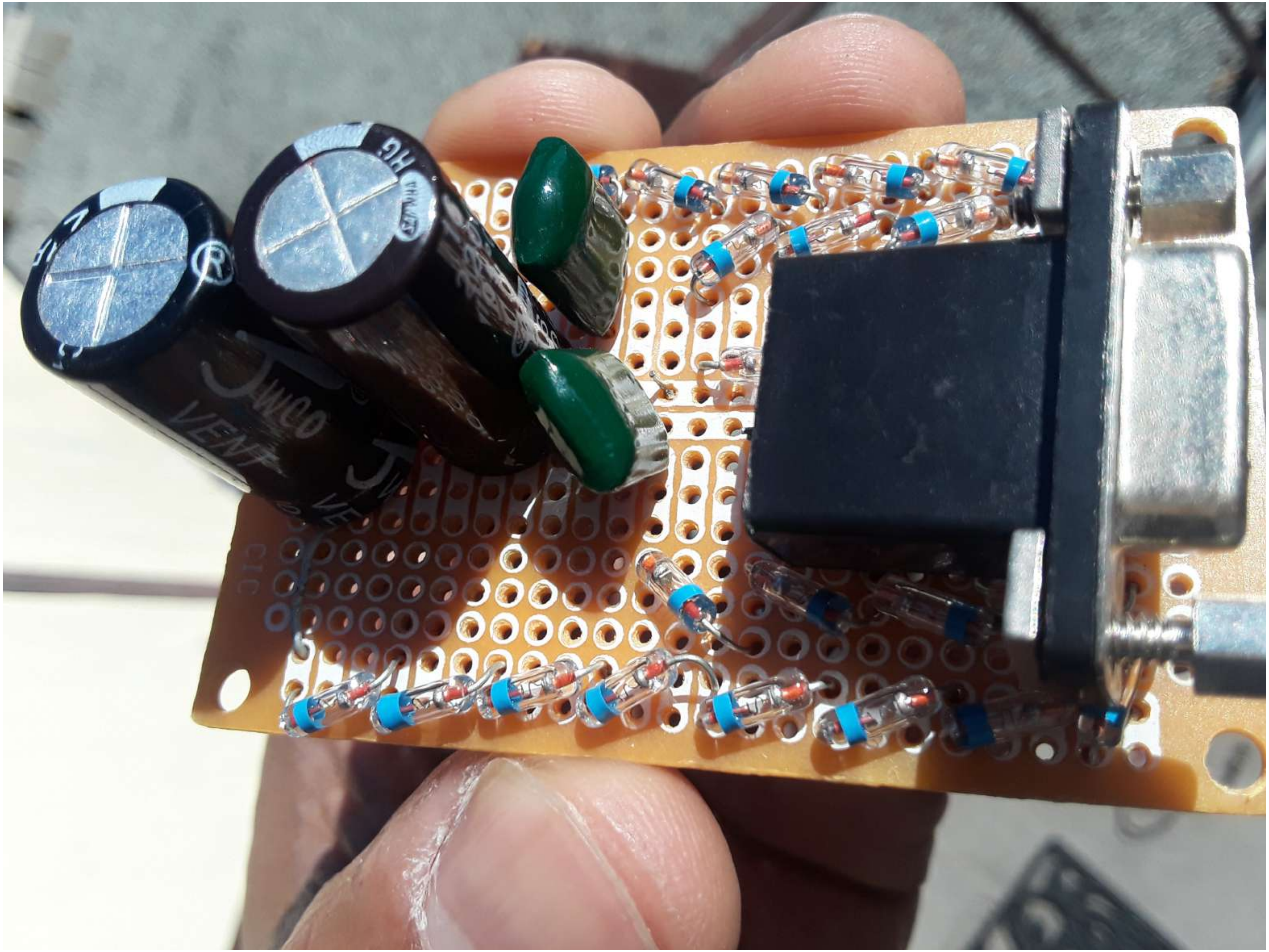
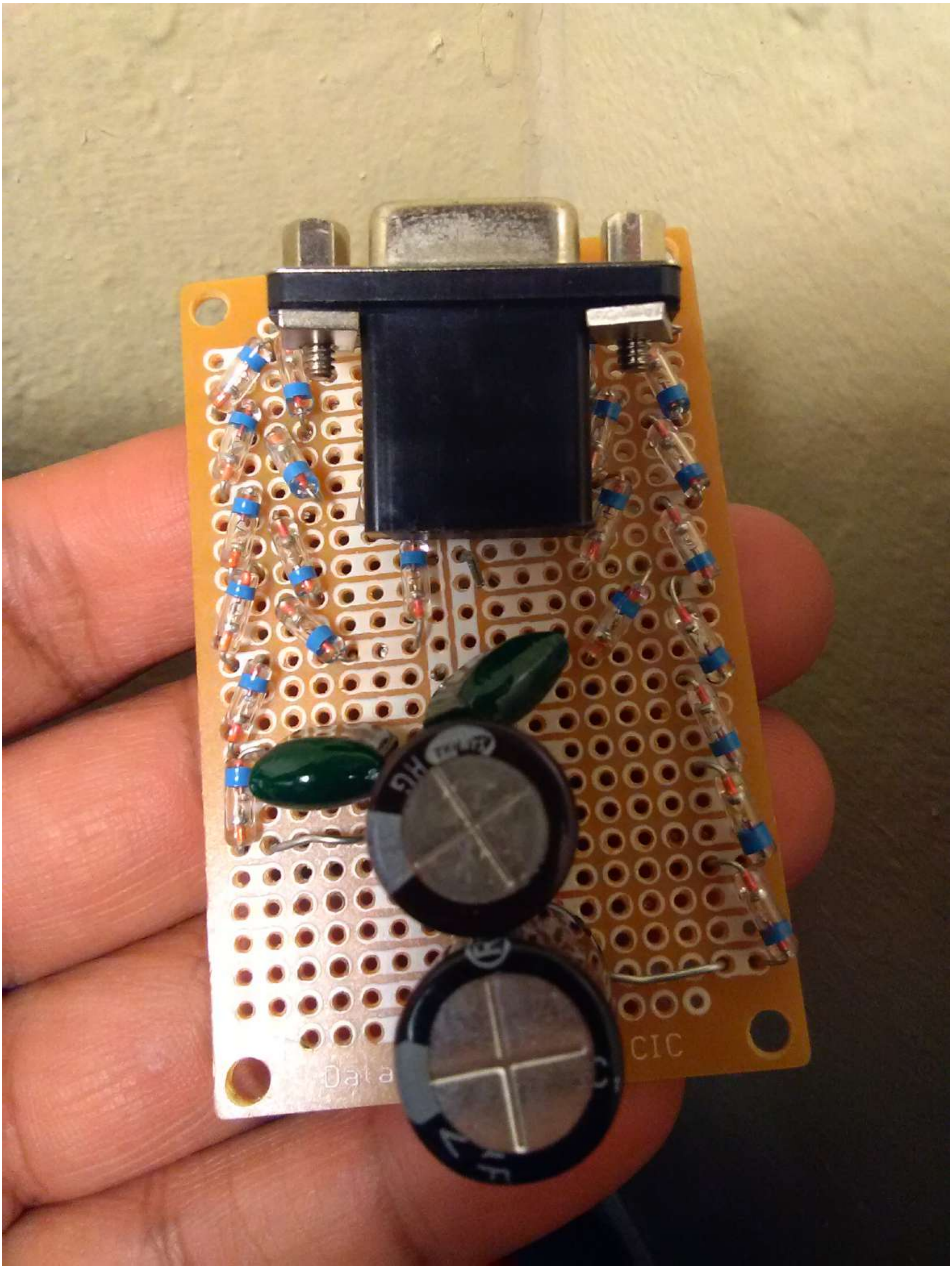
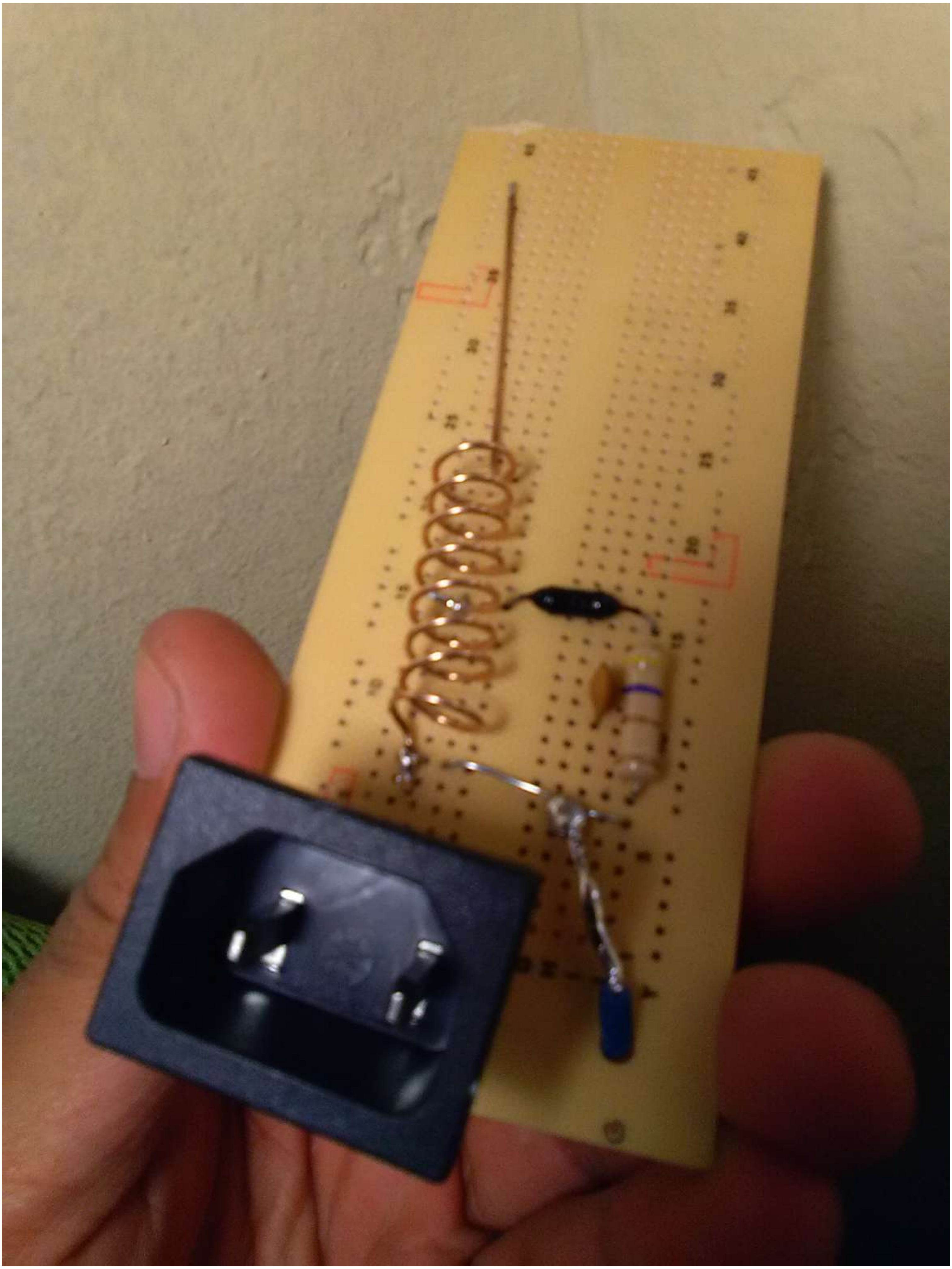
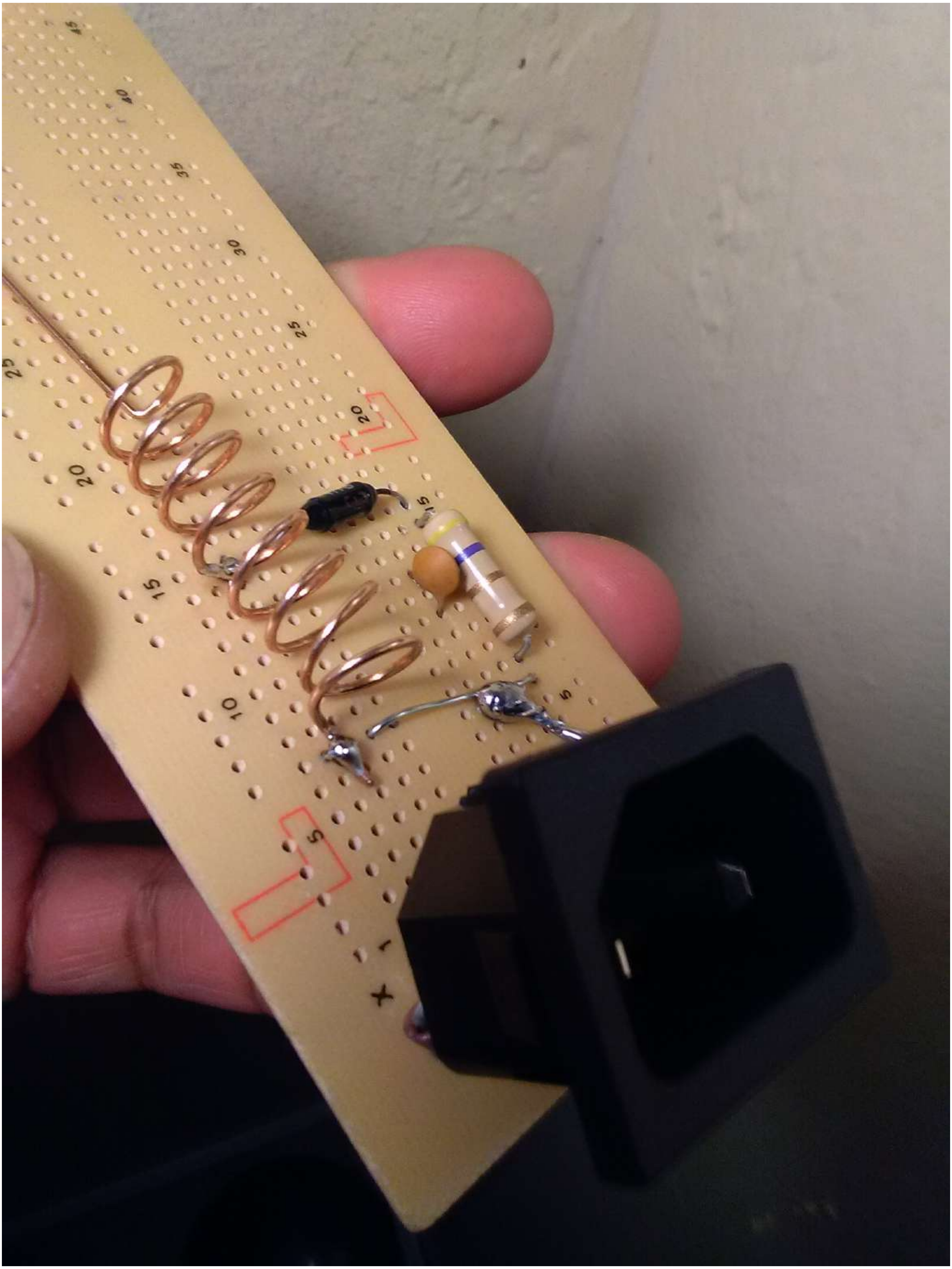


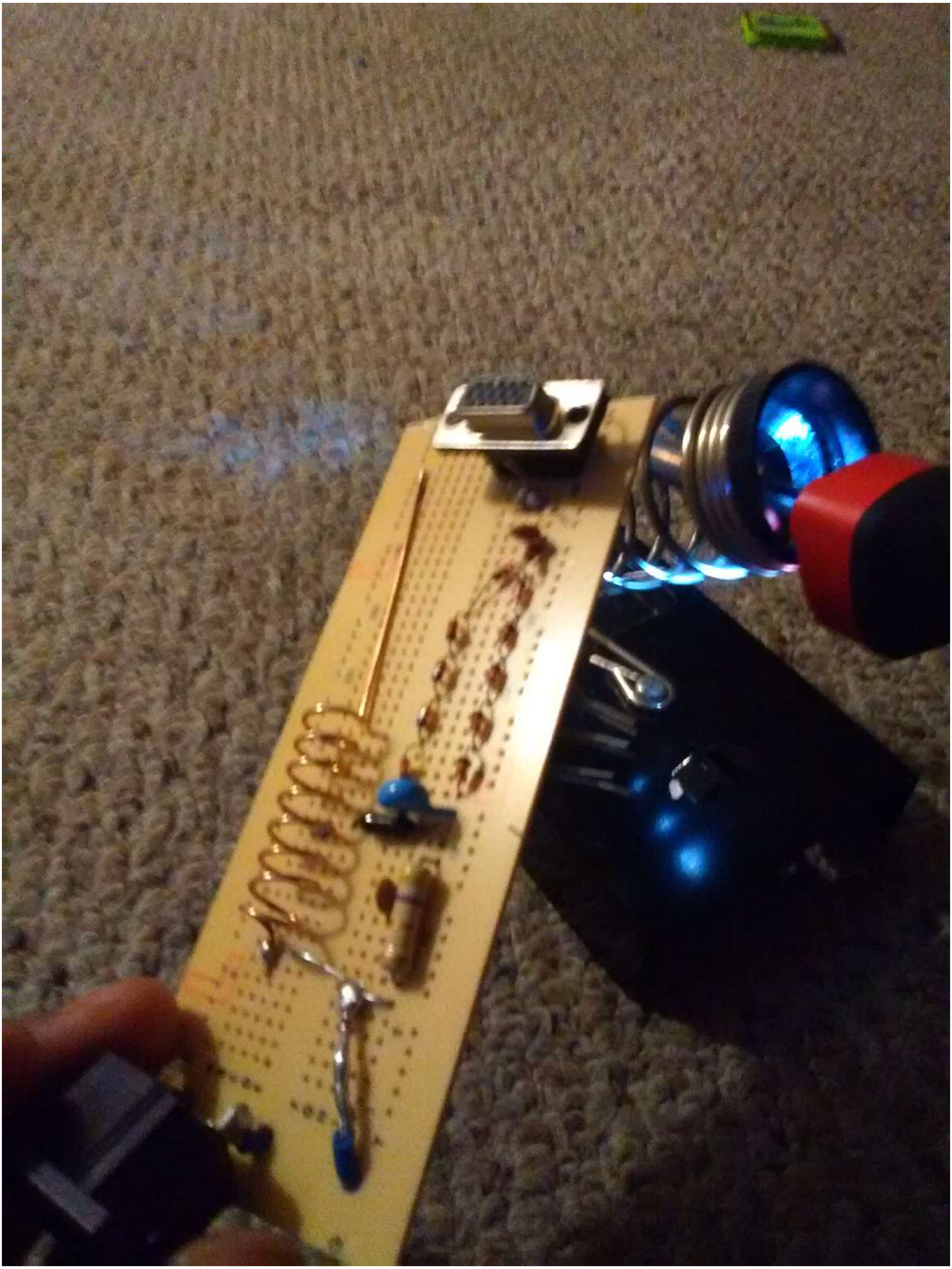


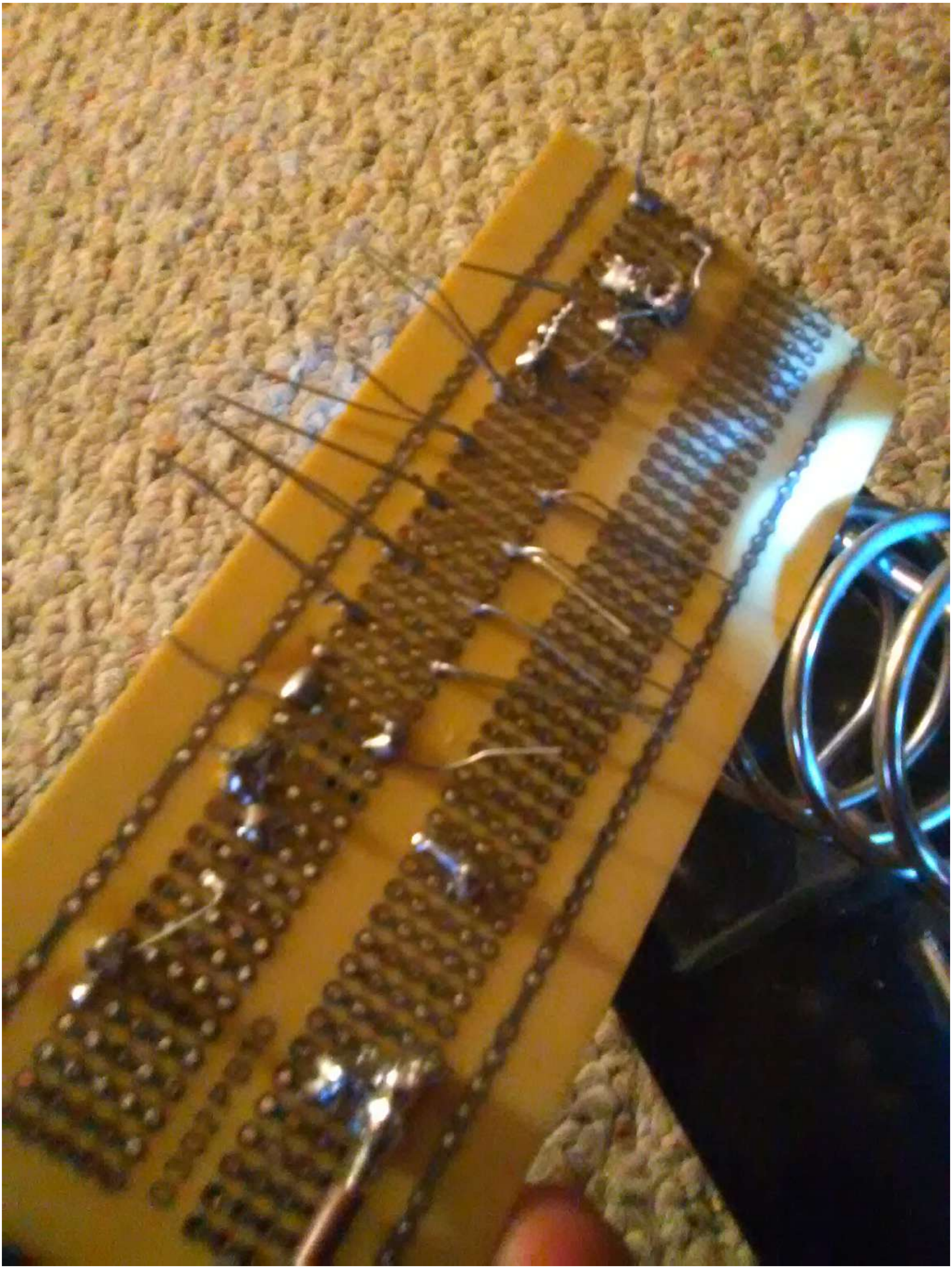


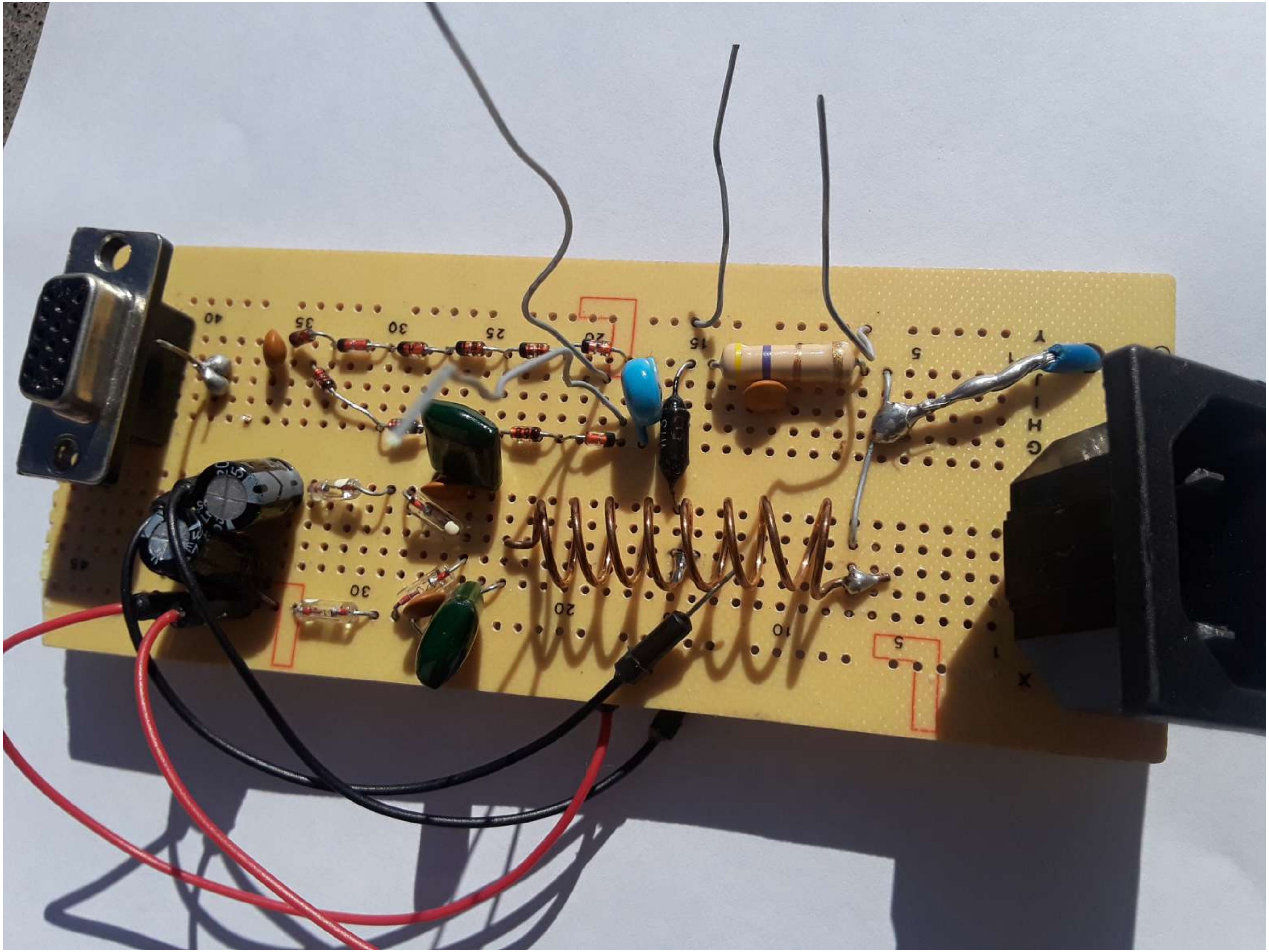


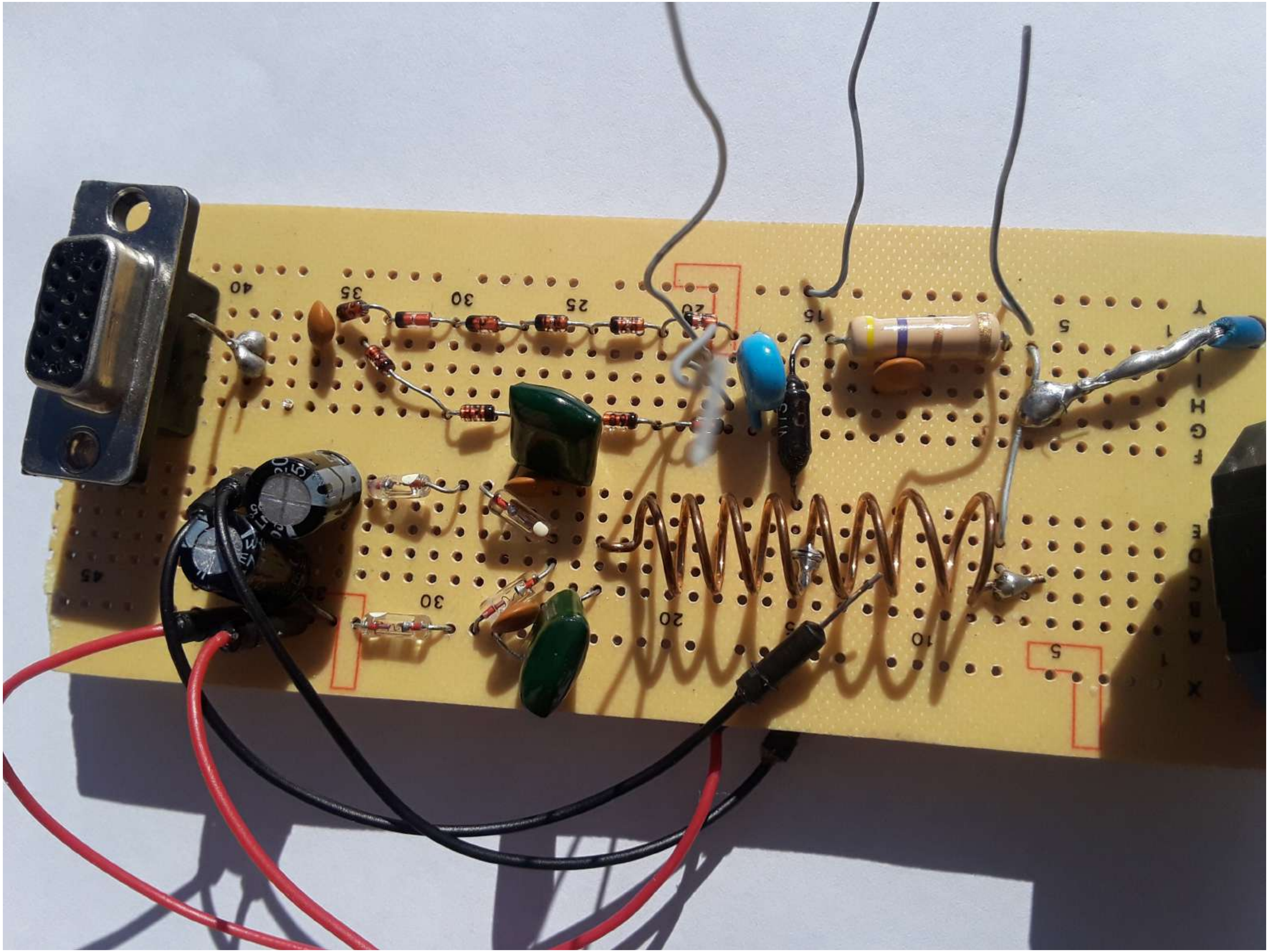


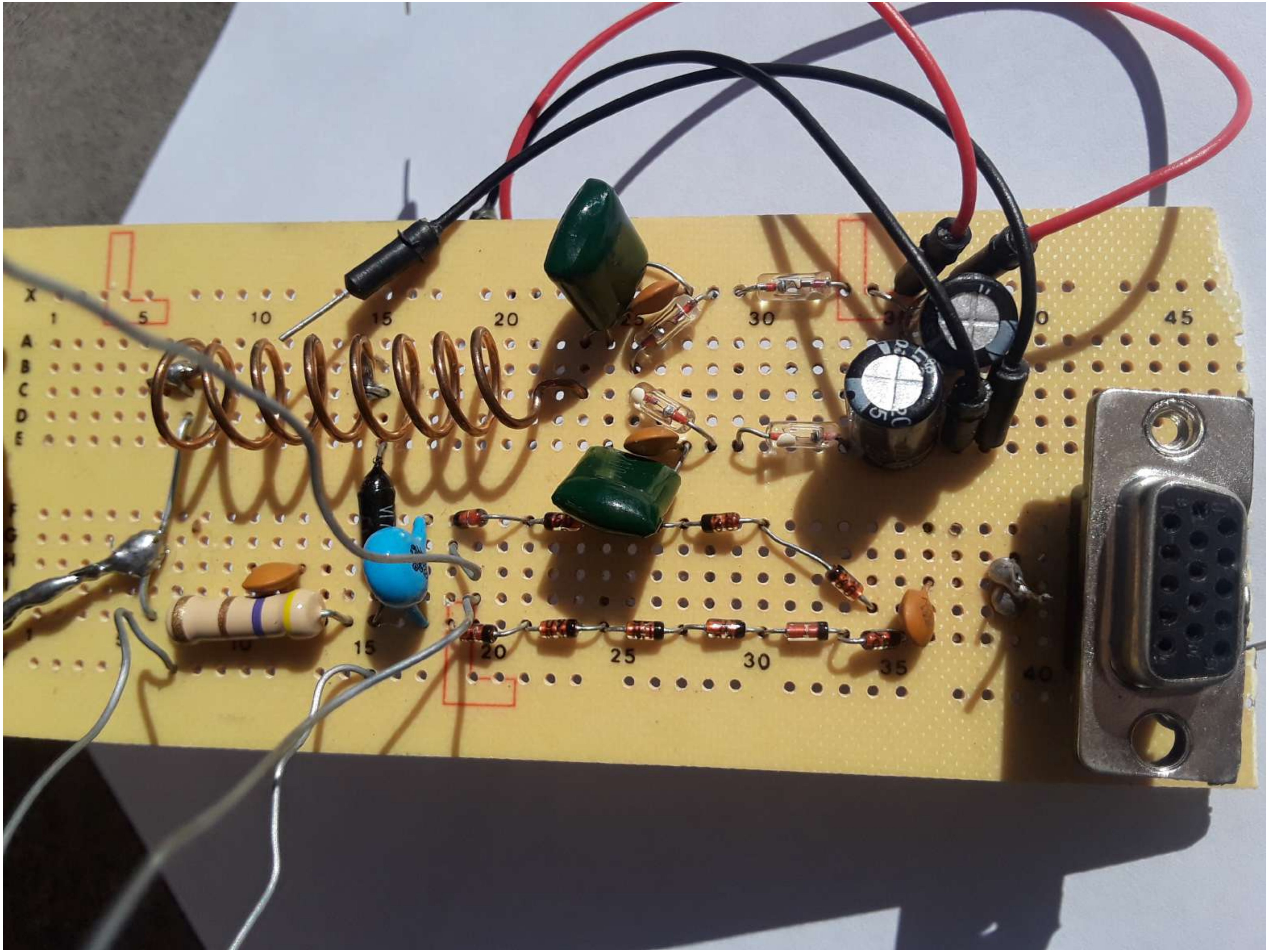
45
40
35
30
25
20
15
10
5
1
X

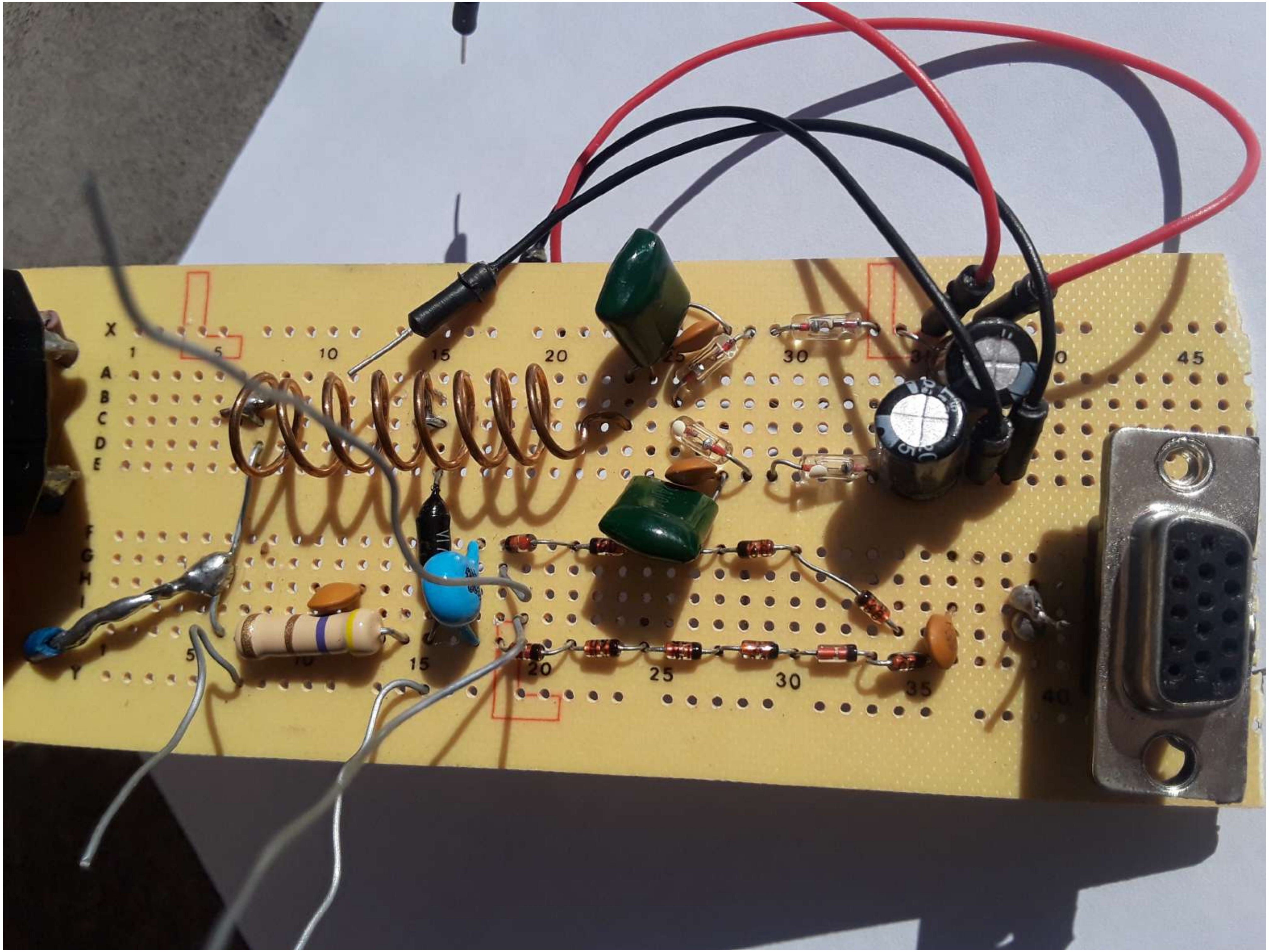


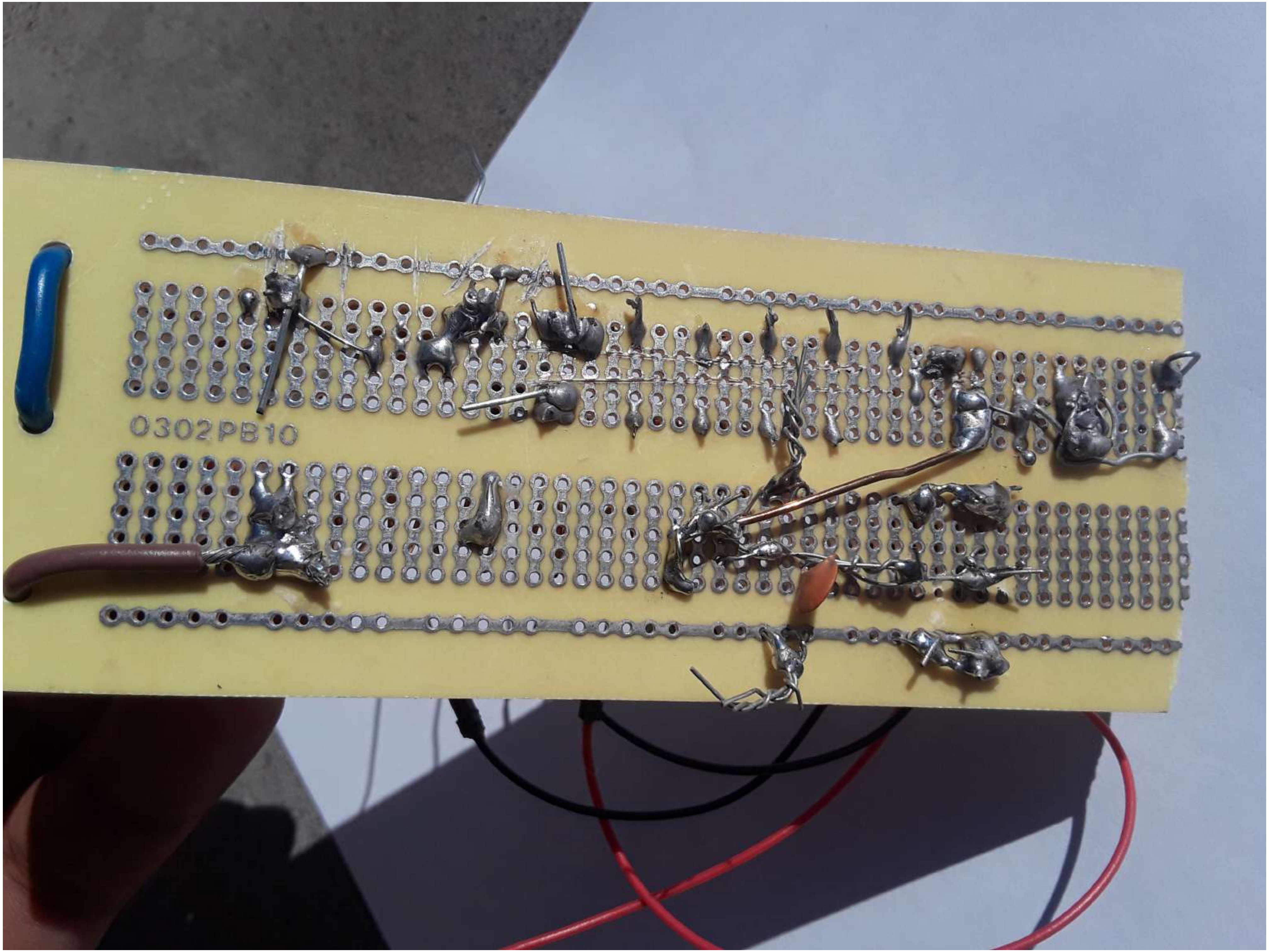








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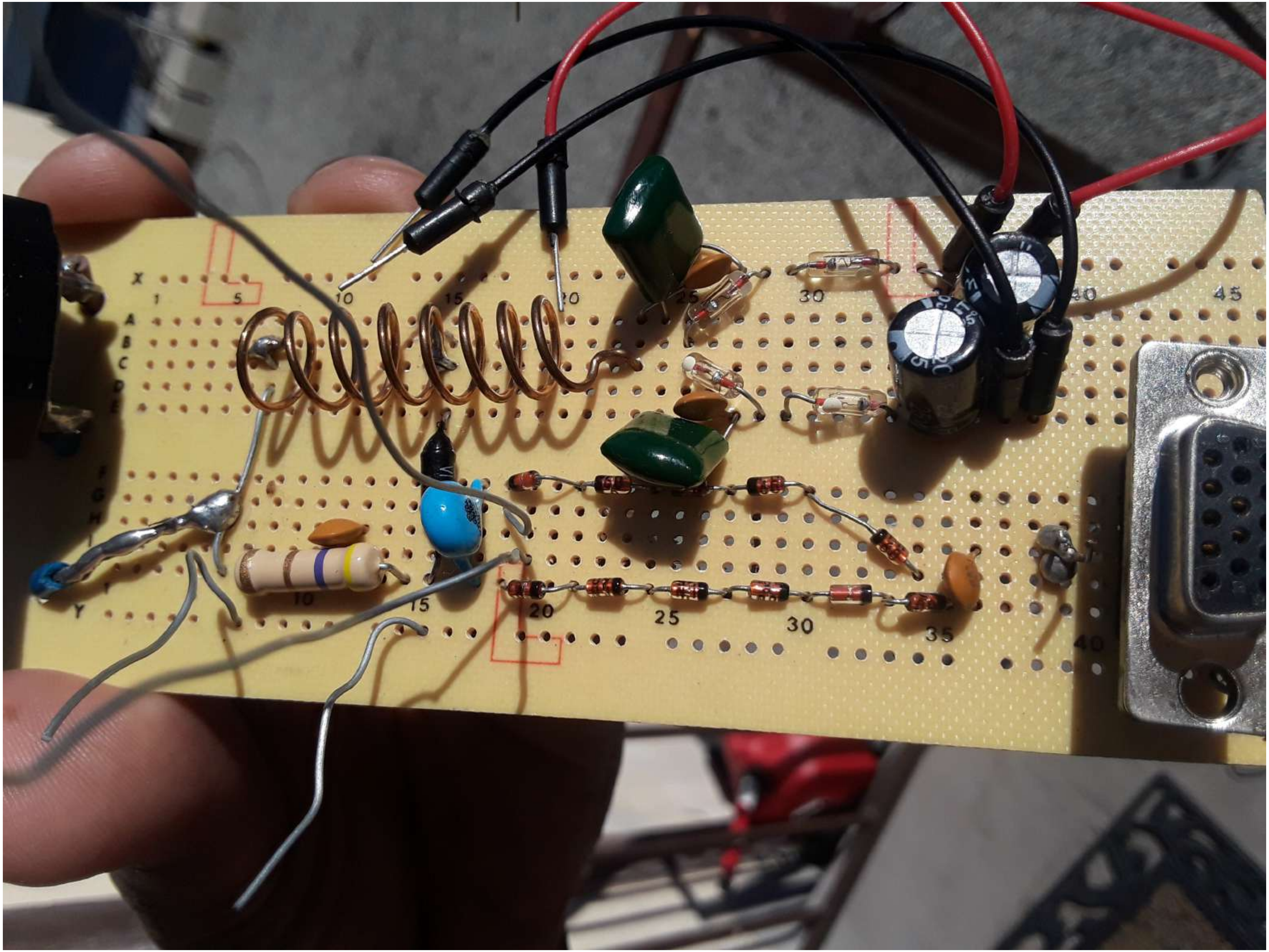

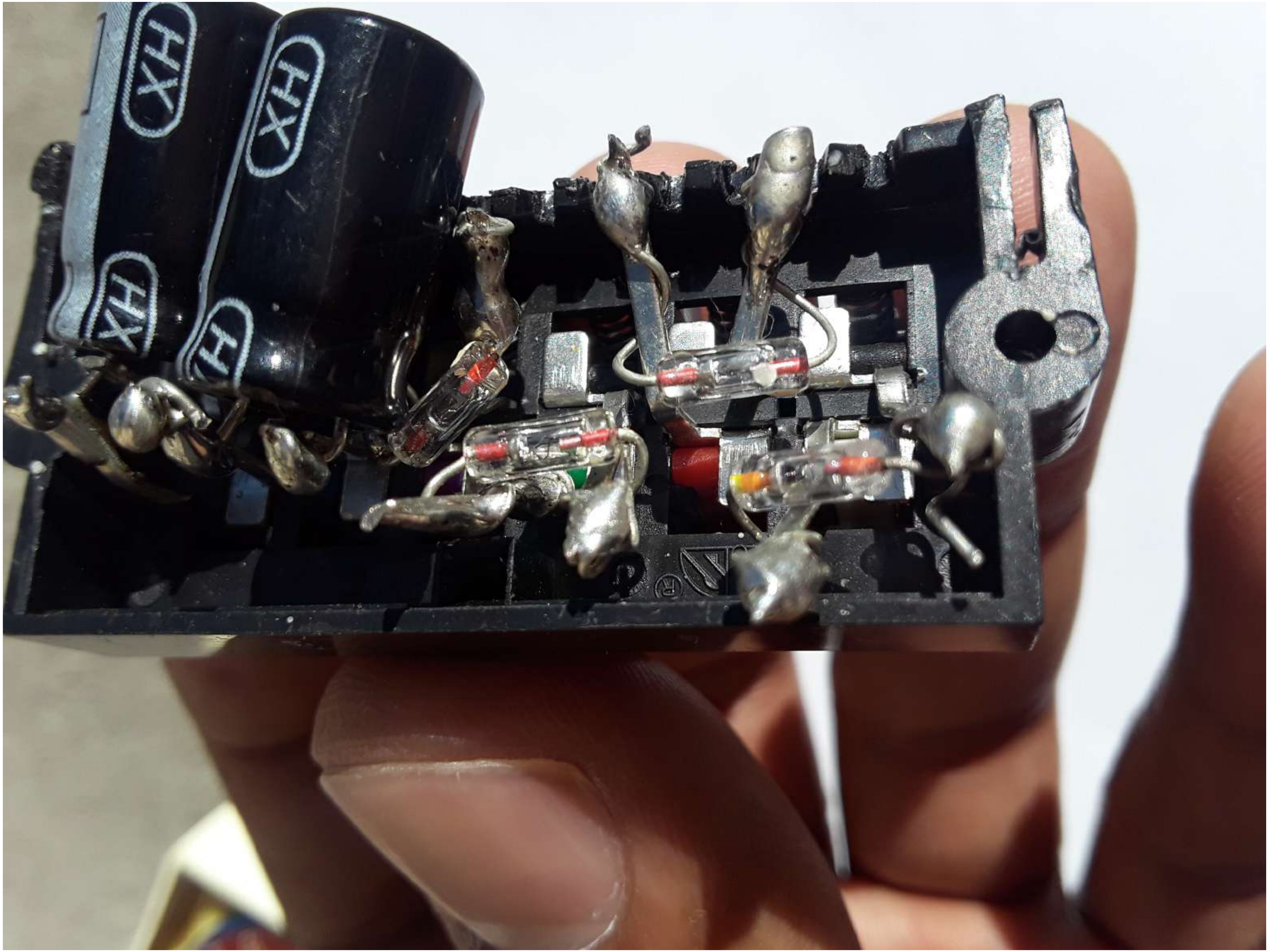

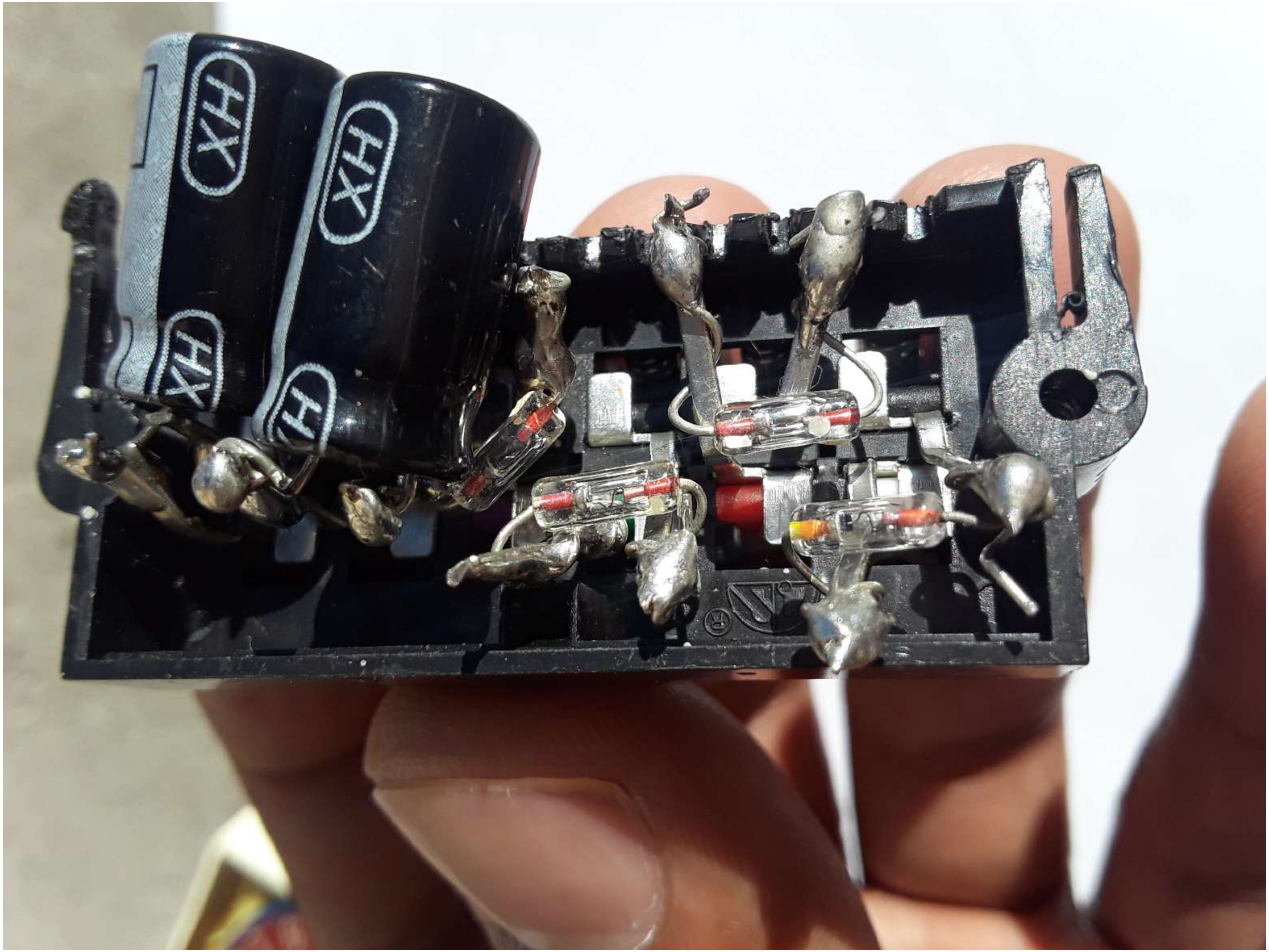
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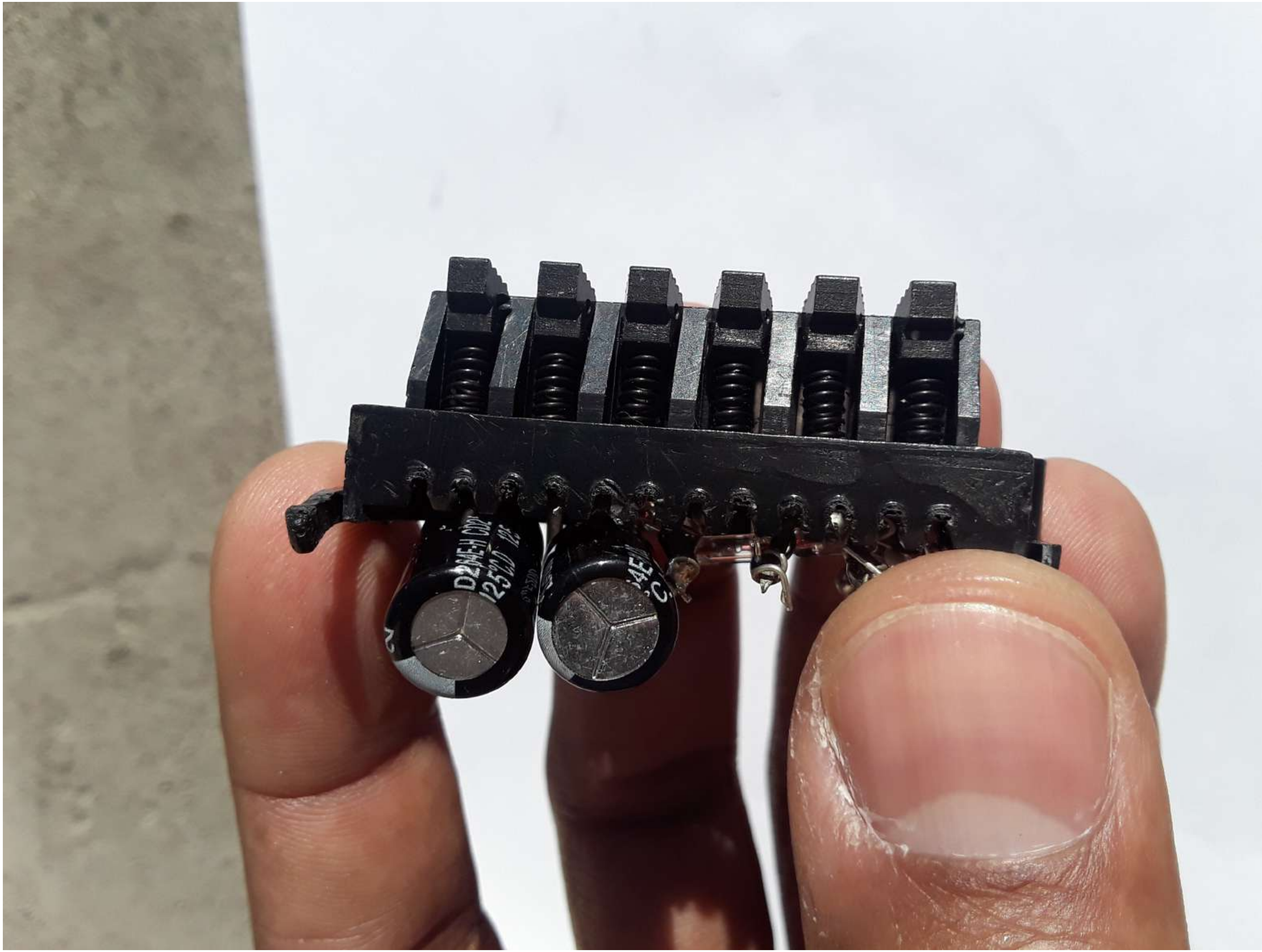

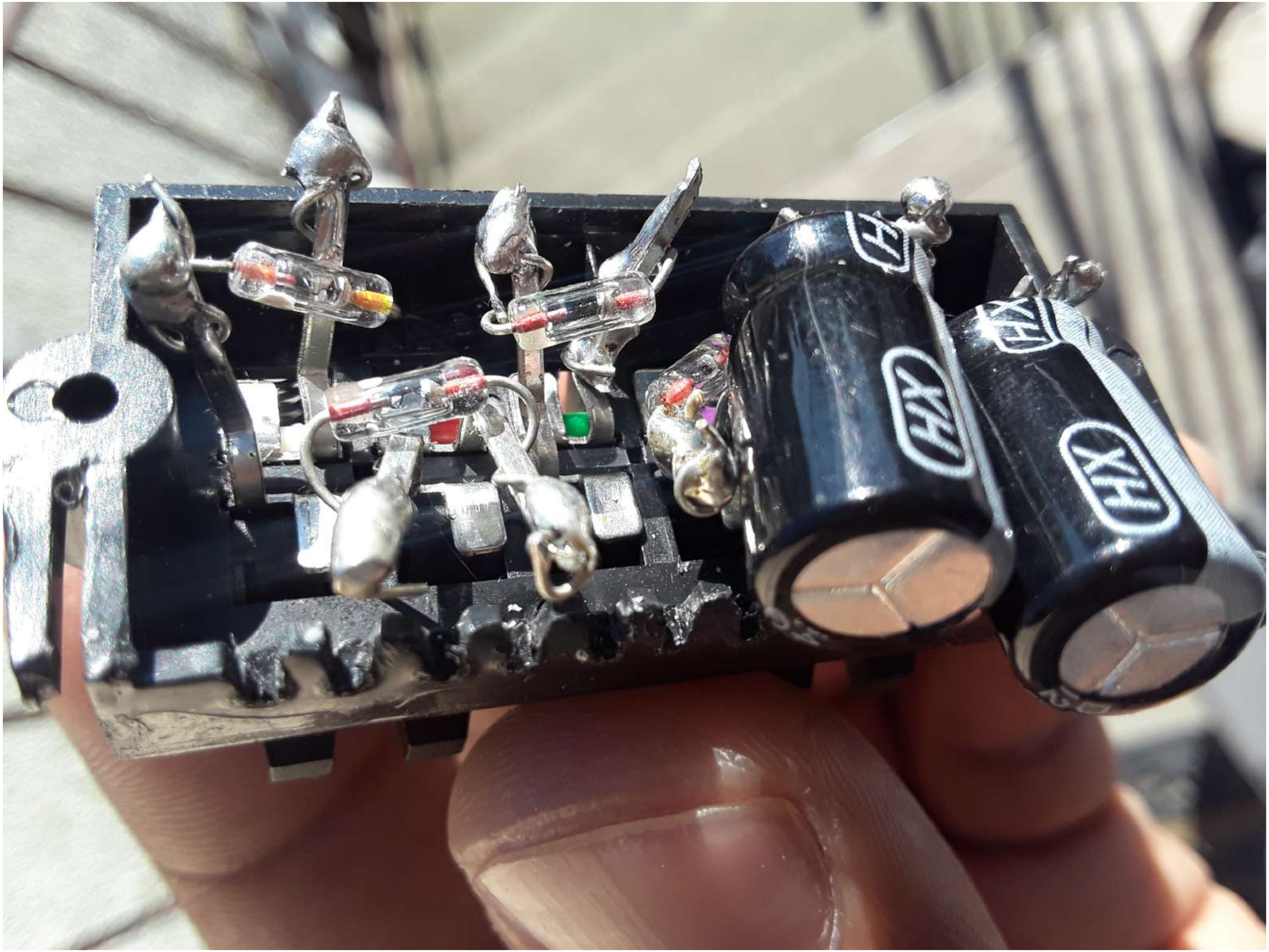
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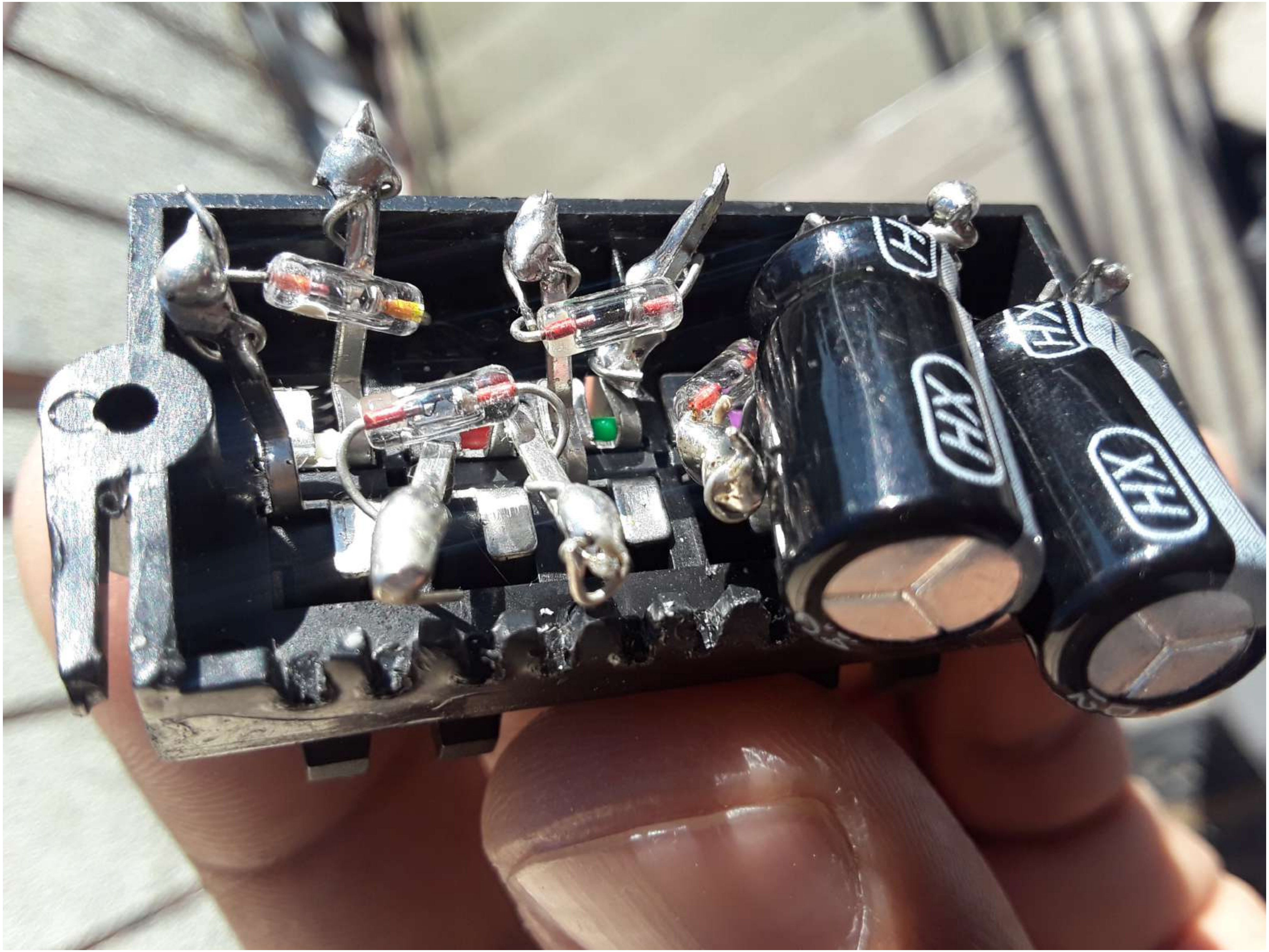
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HX
HX
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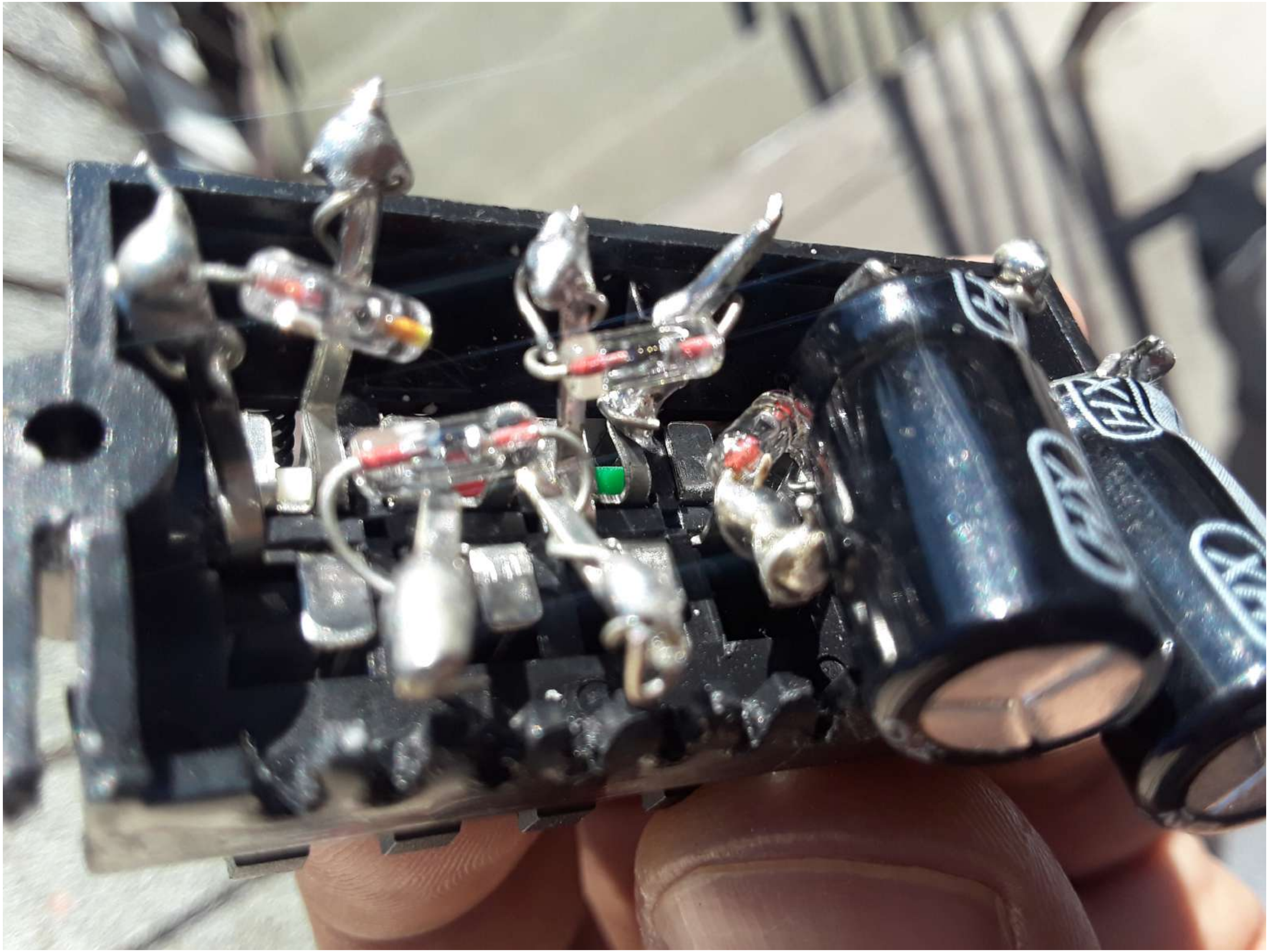

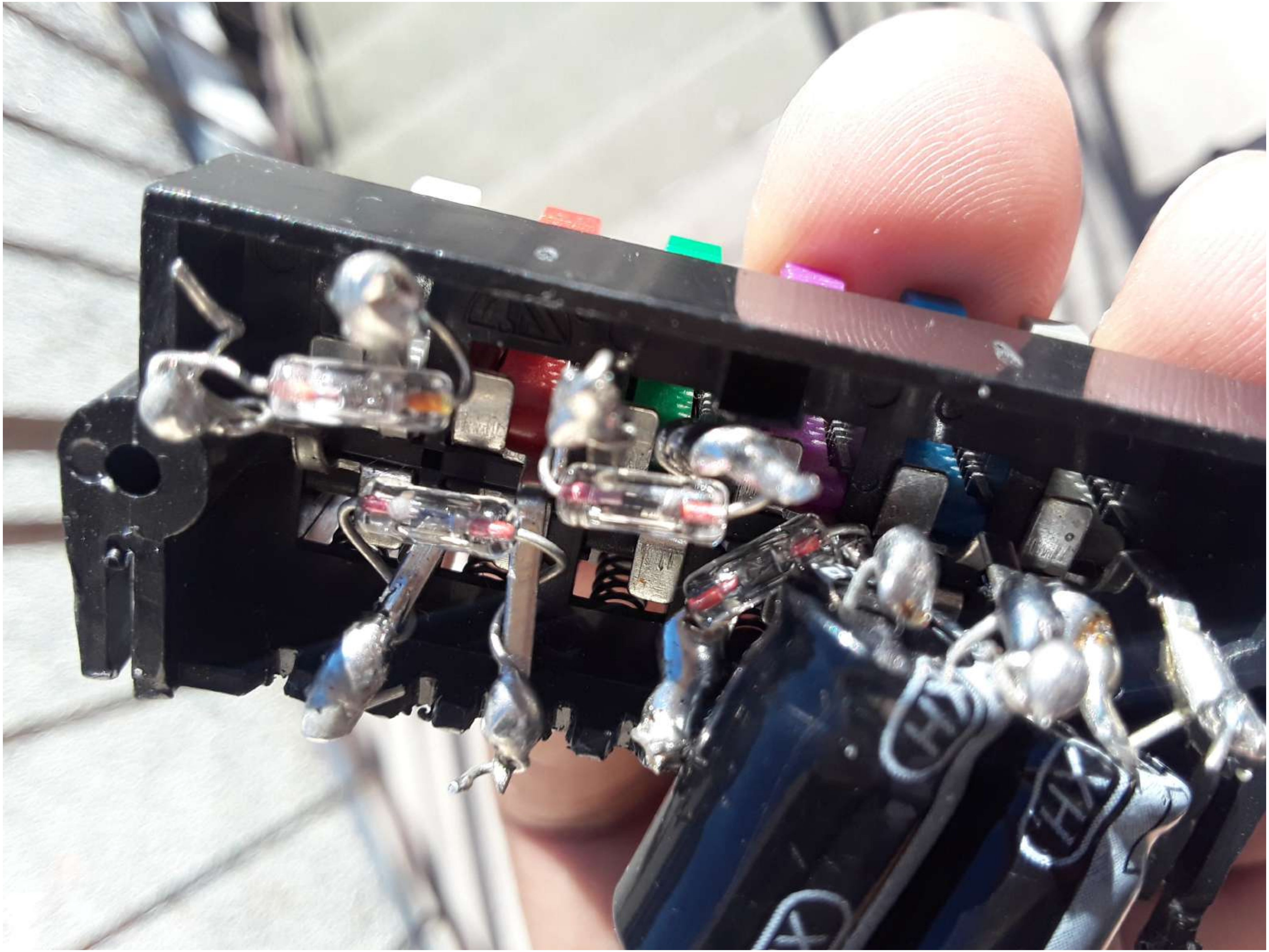
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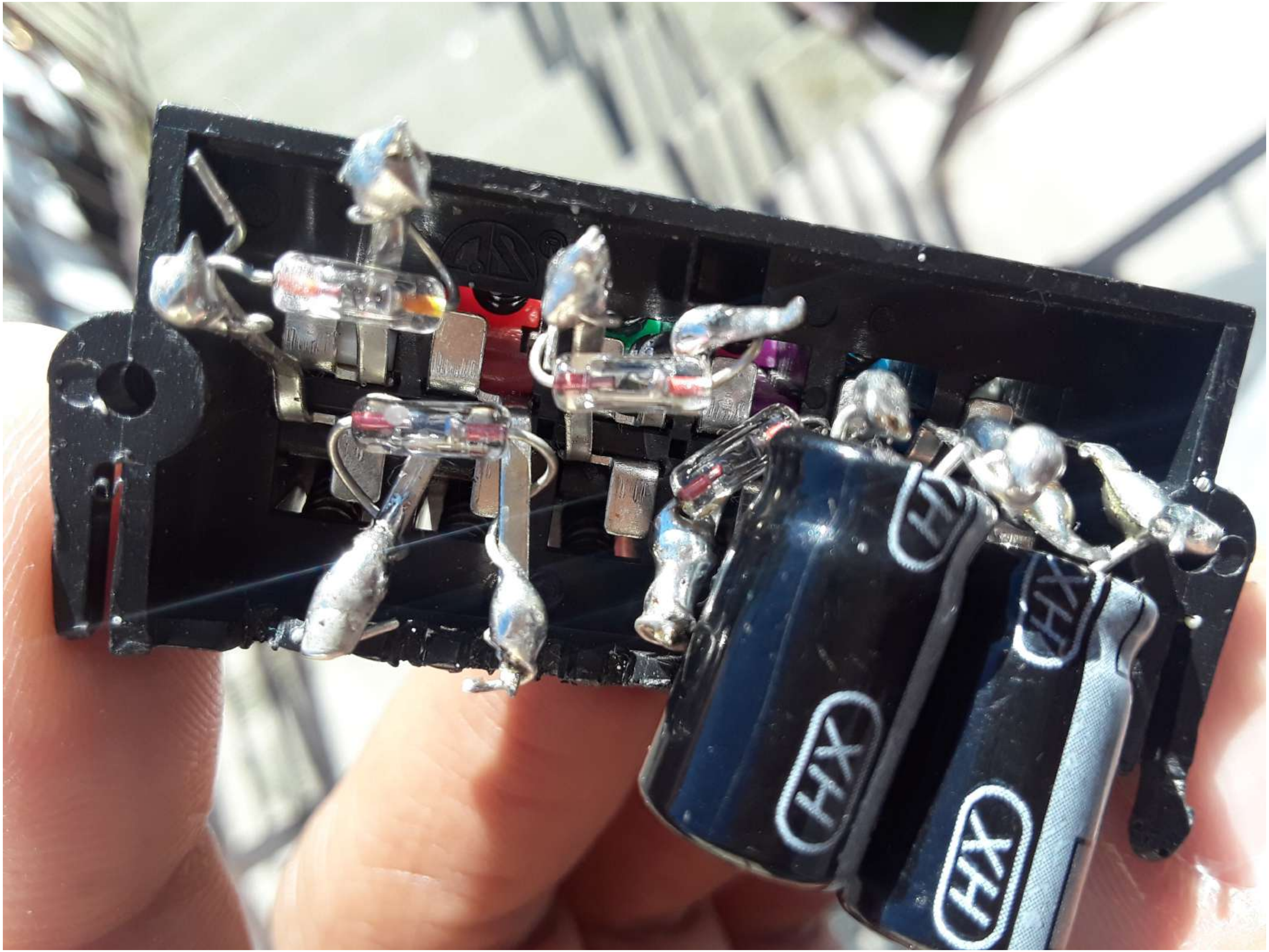
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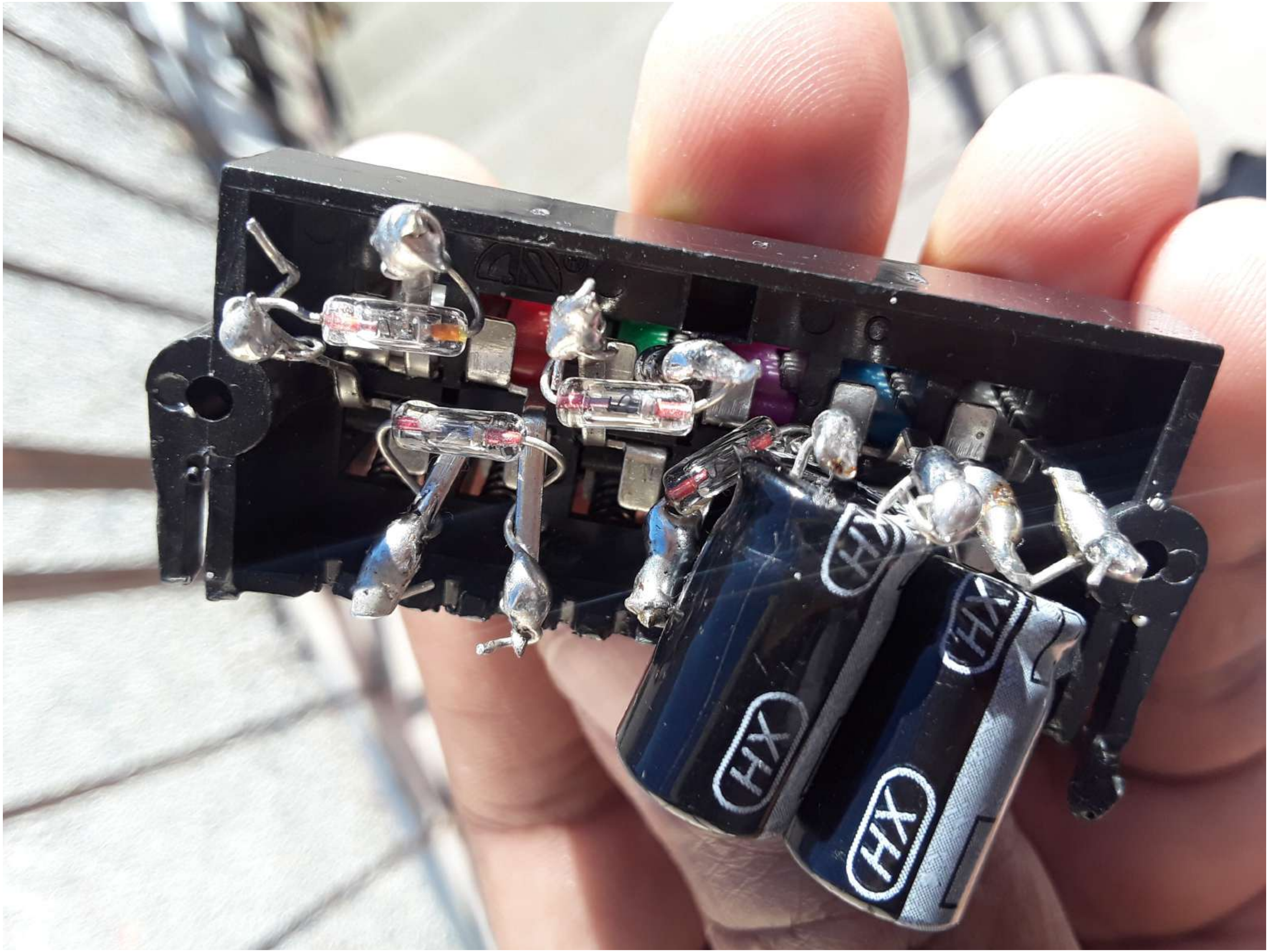
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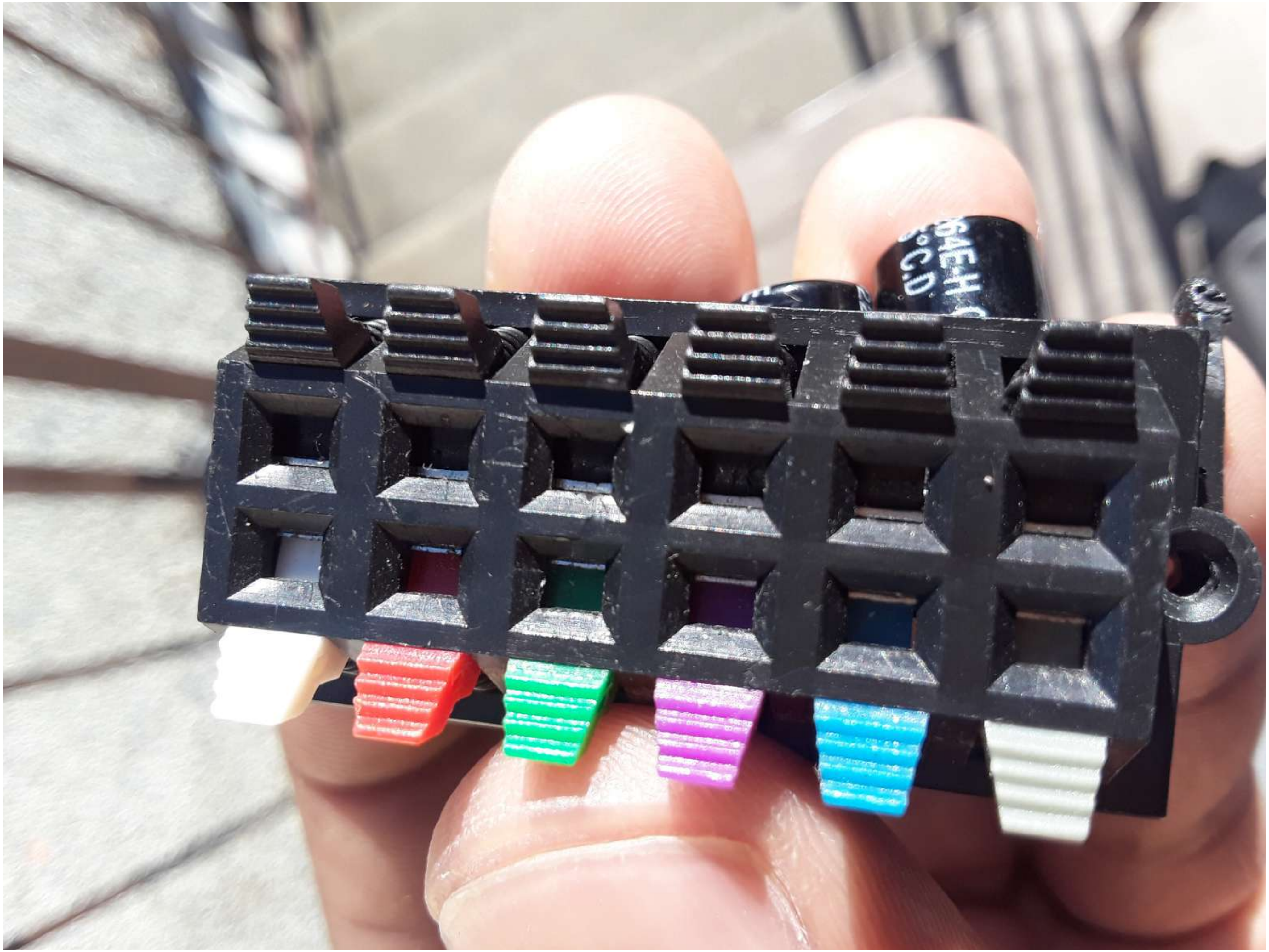

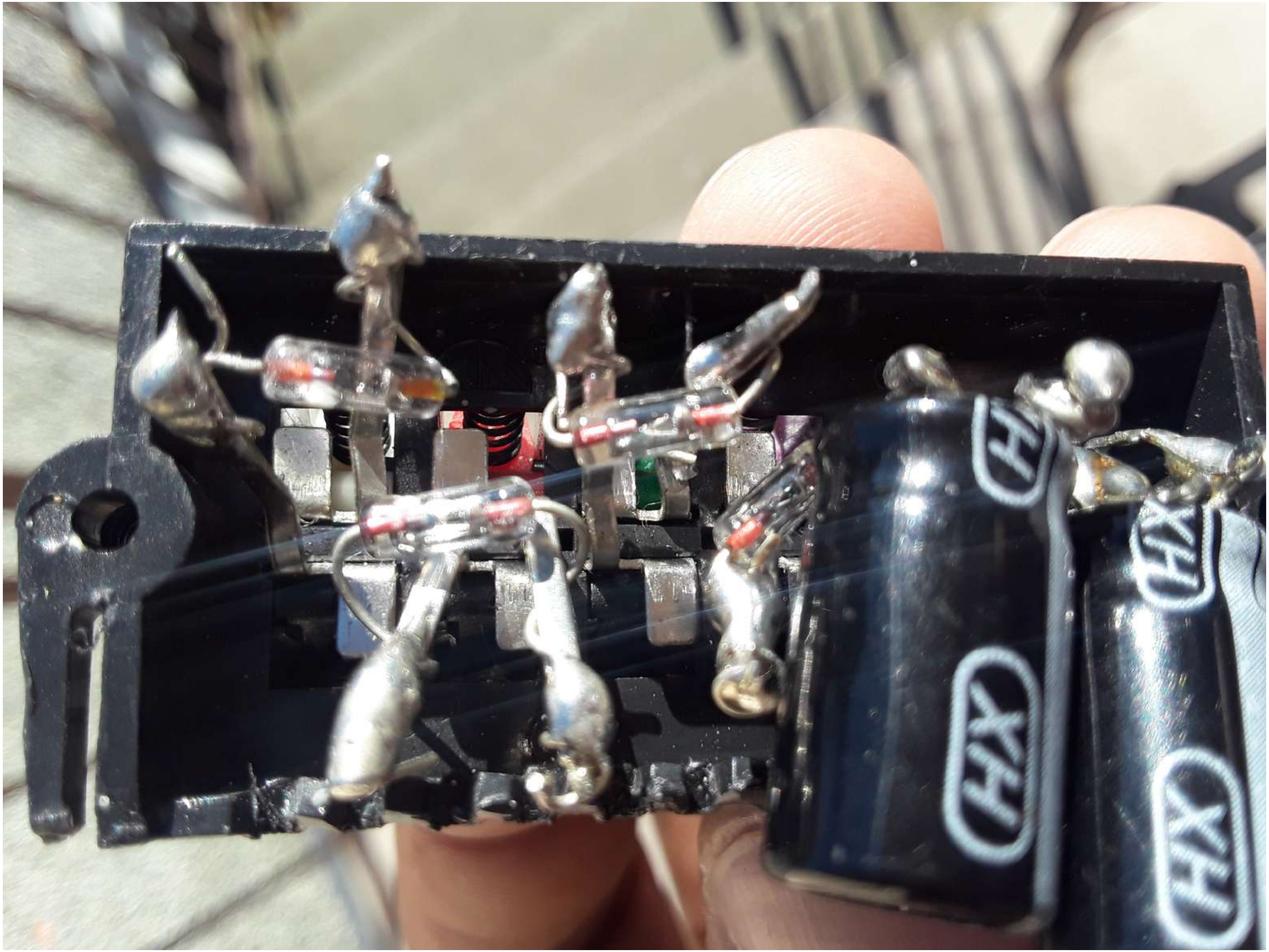
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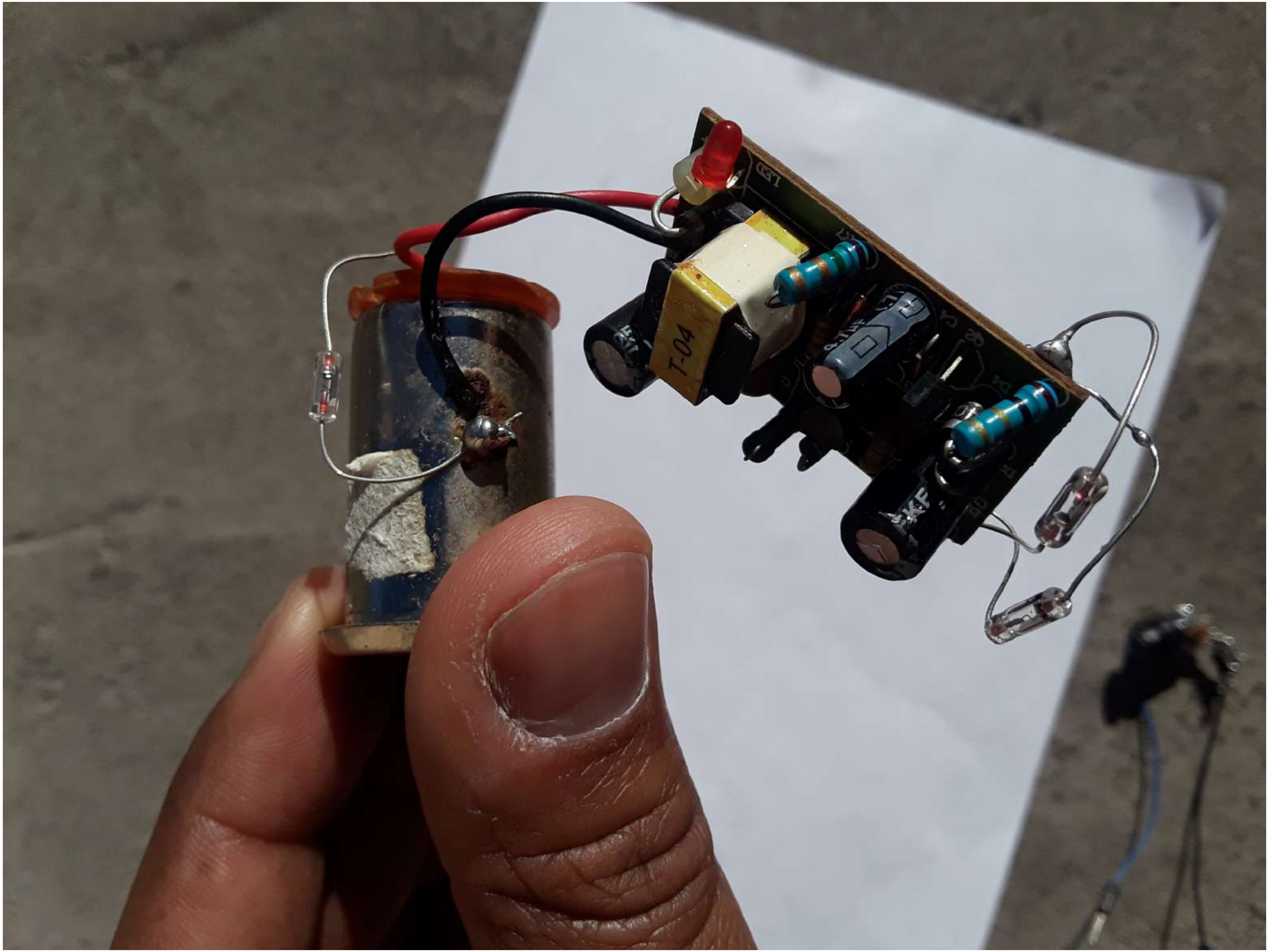
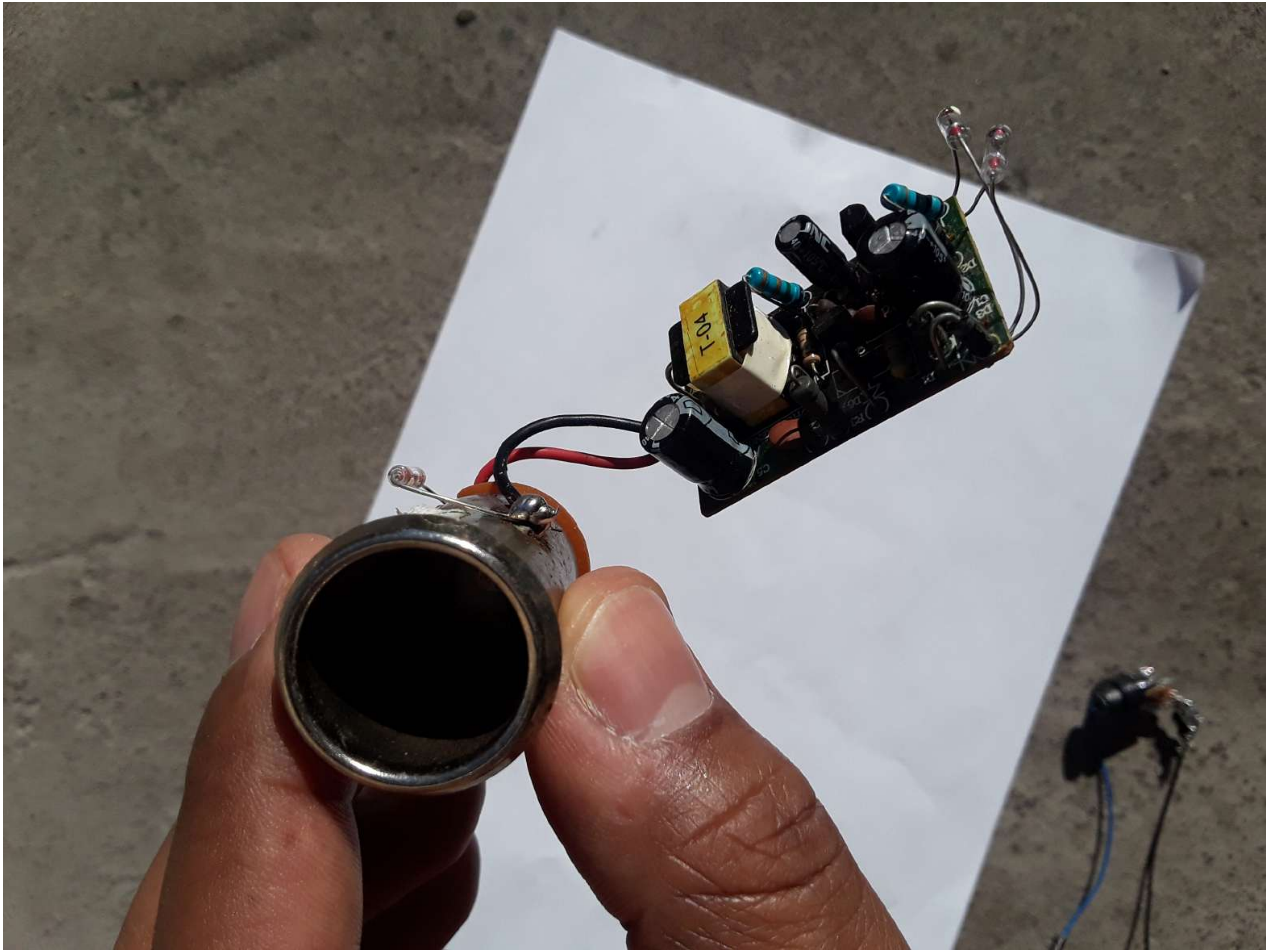
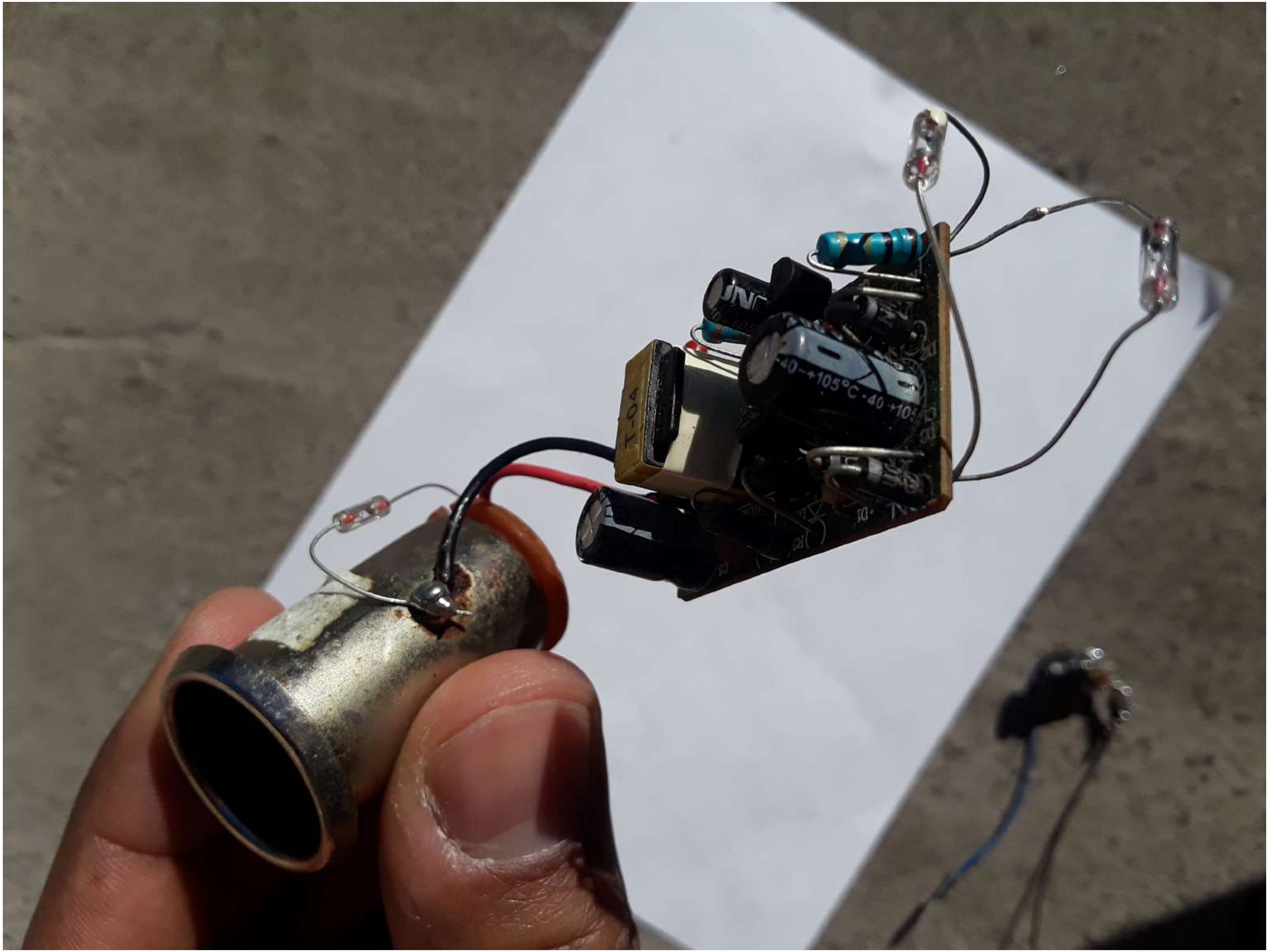
HX
HX


T-04


T-04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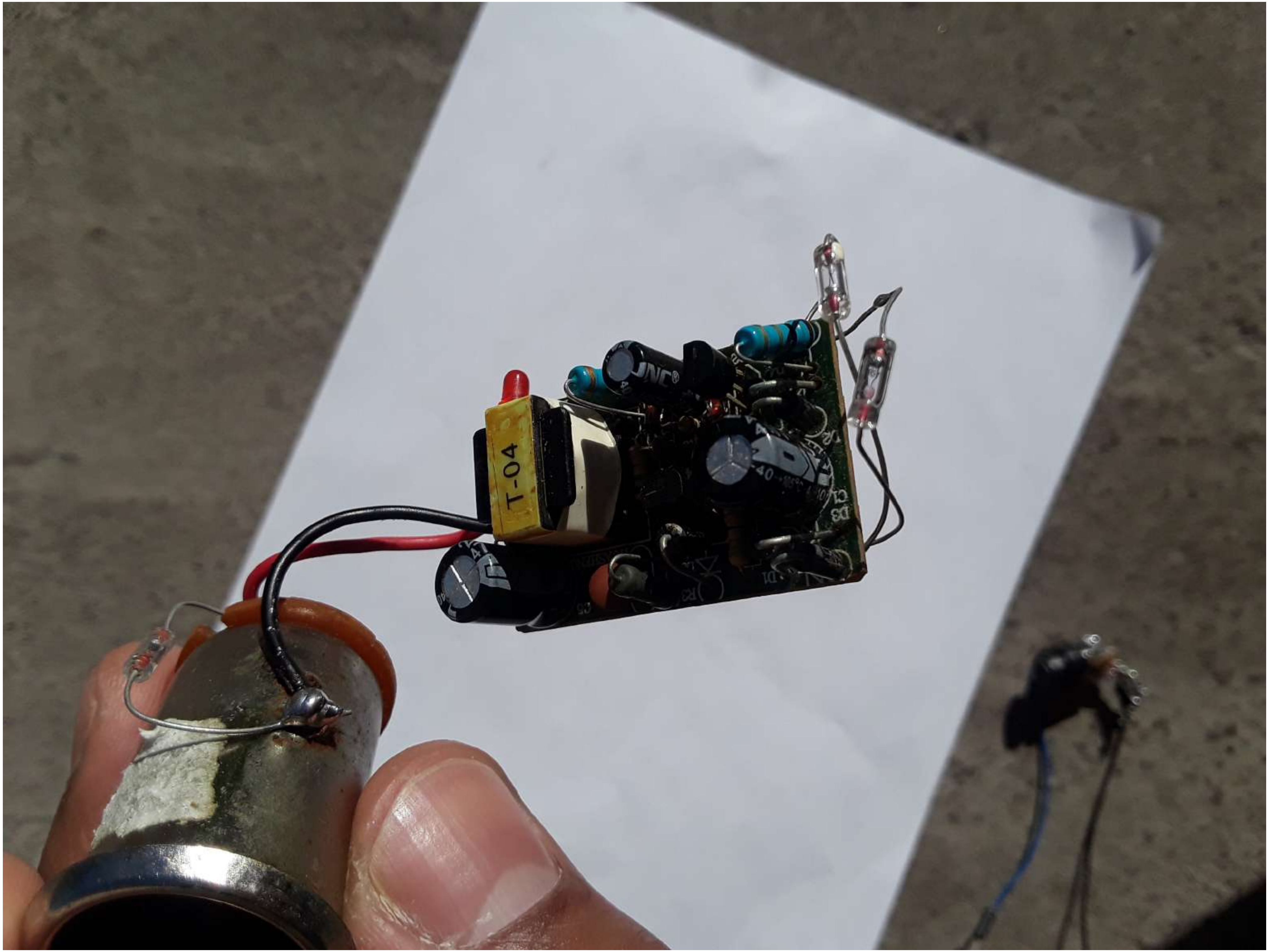
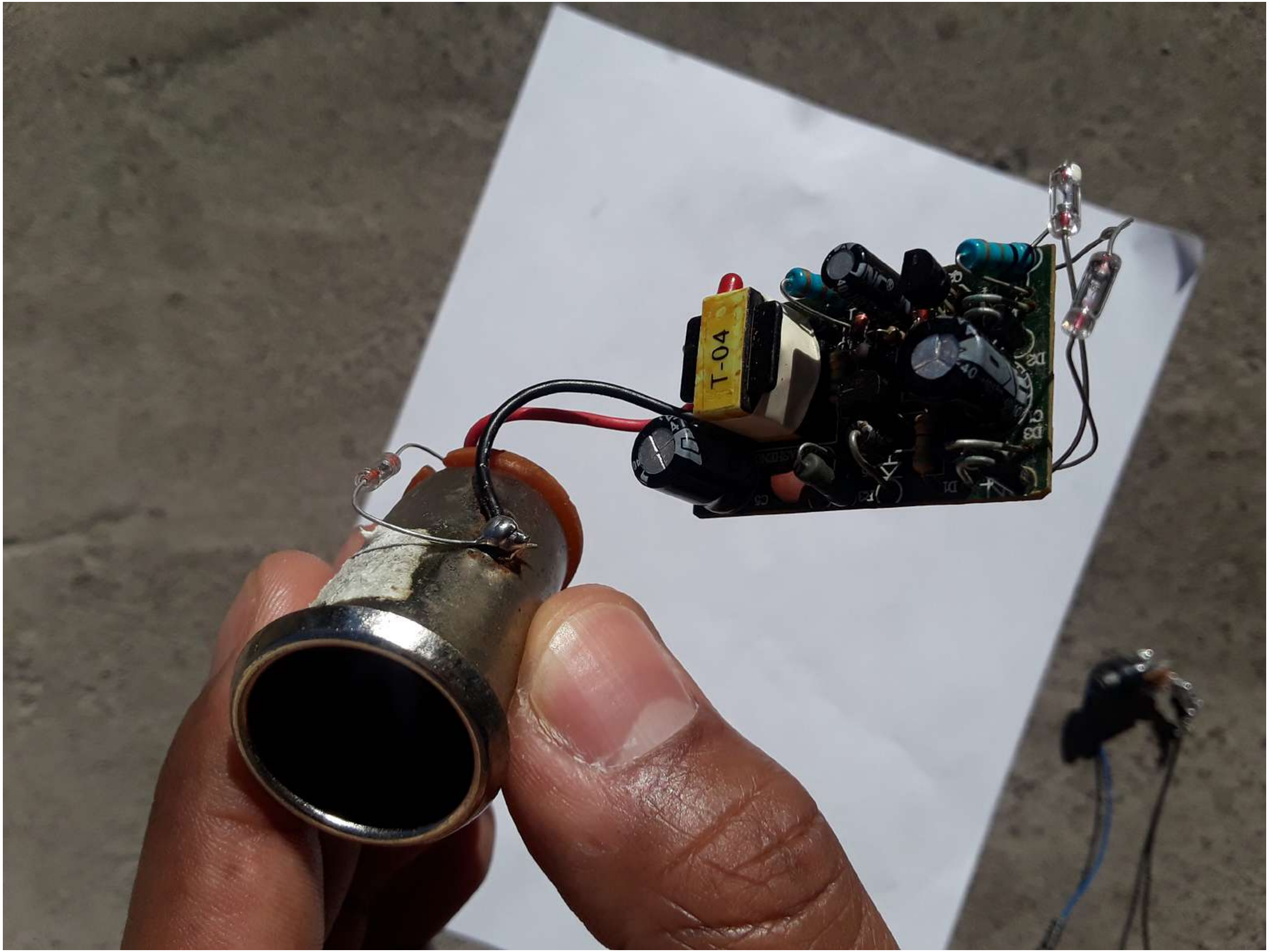
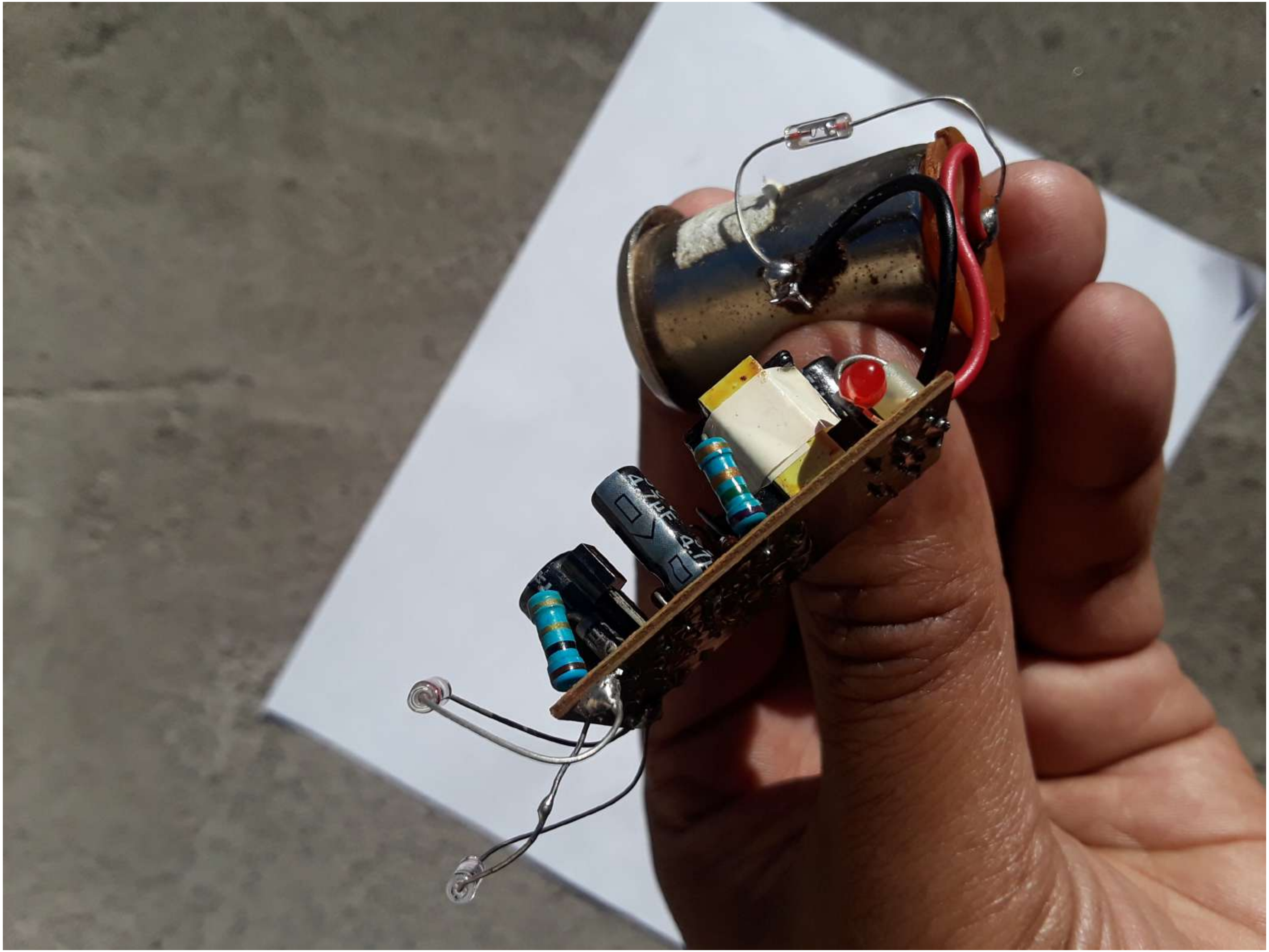
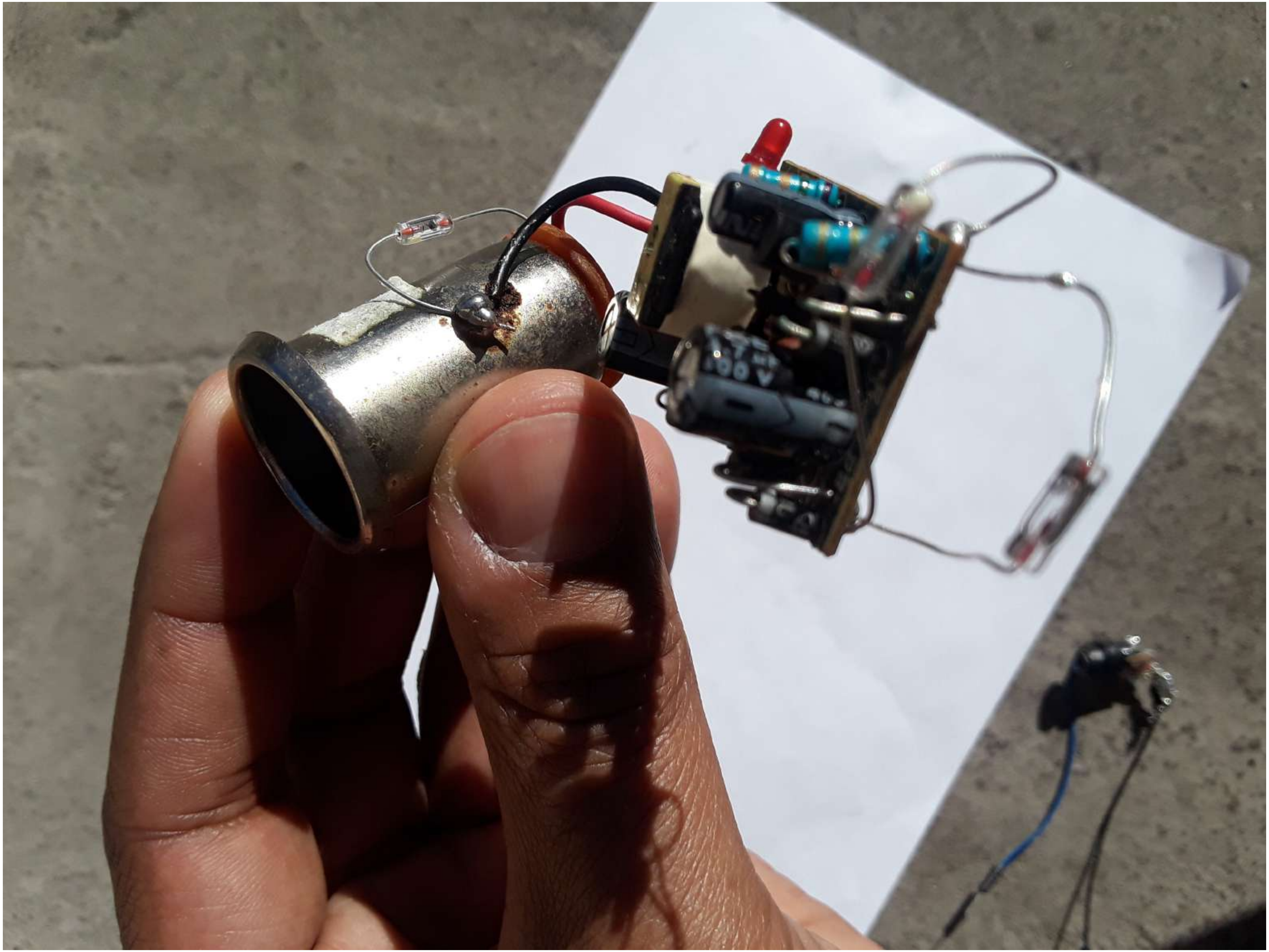
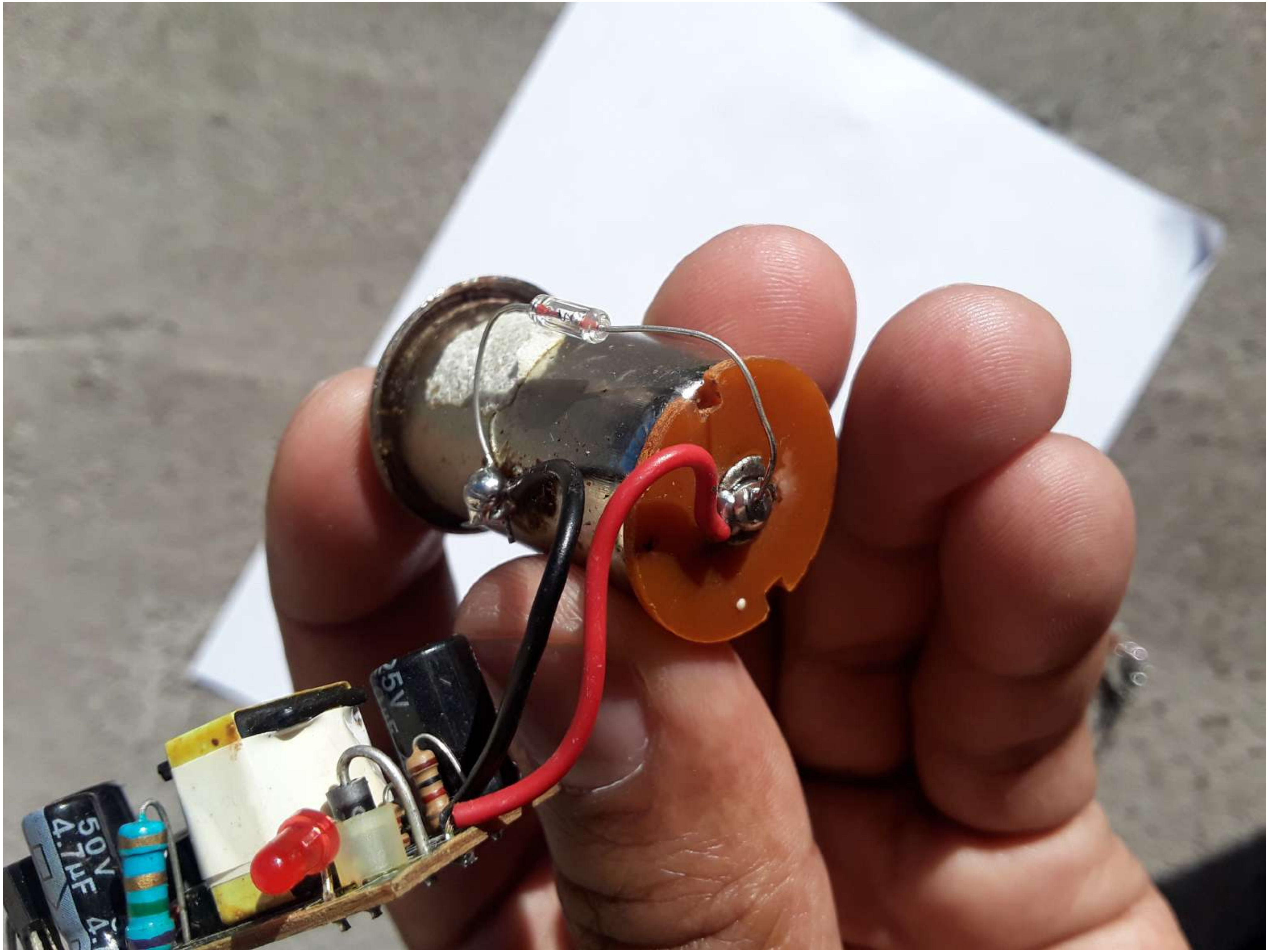
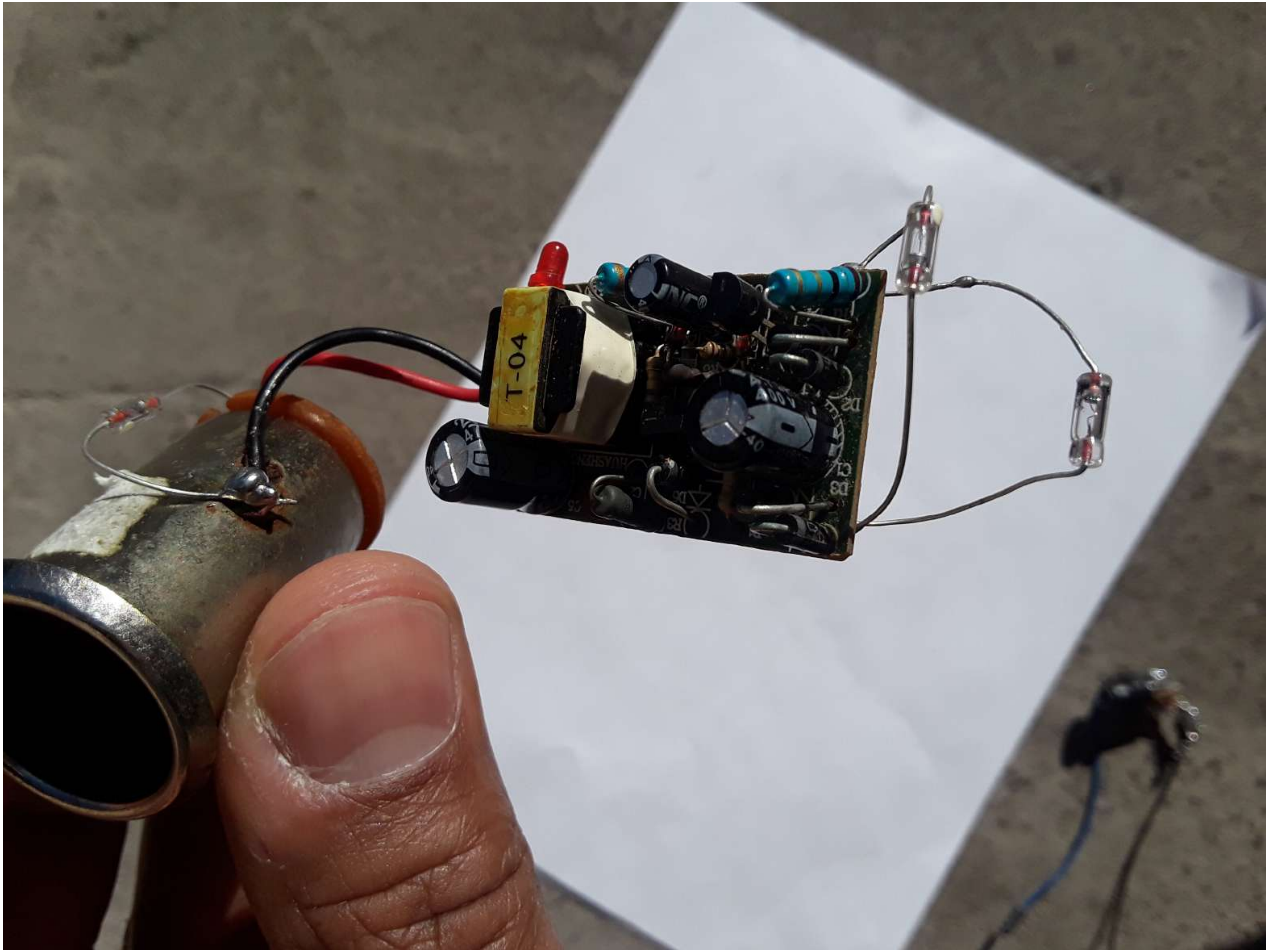

T-04

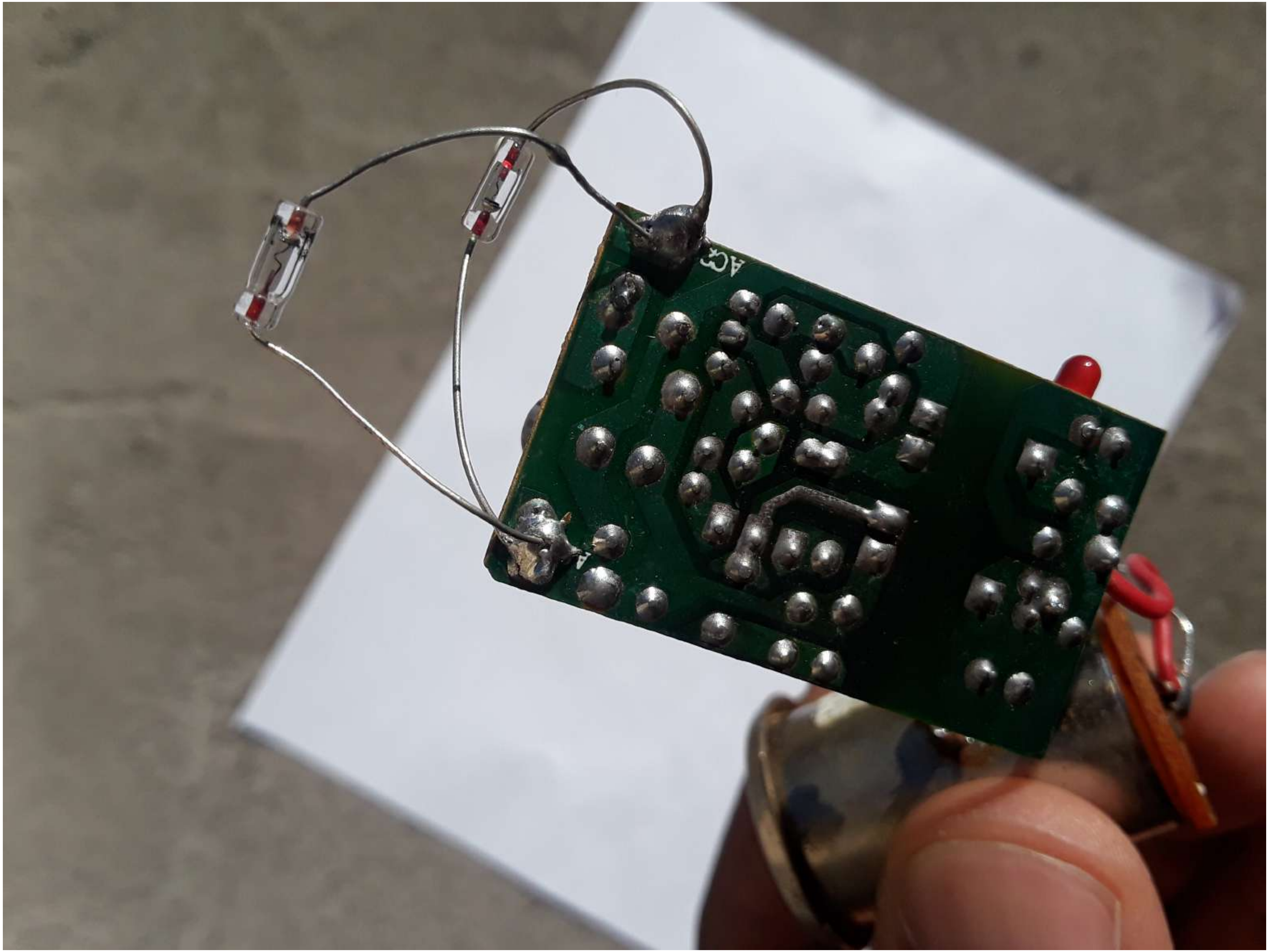

T-04

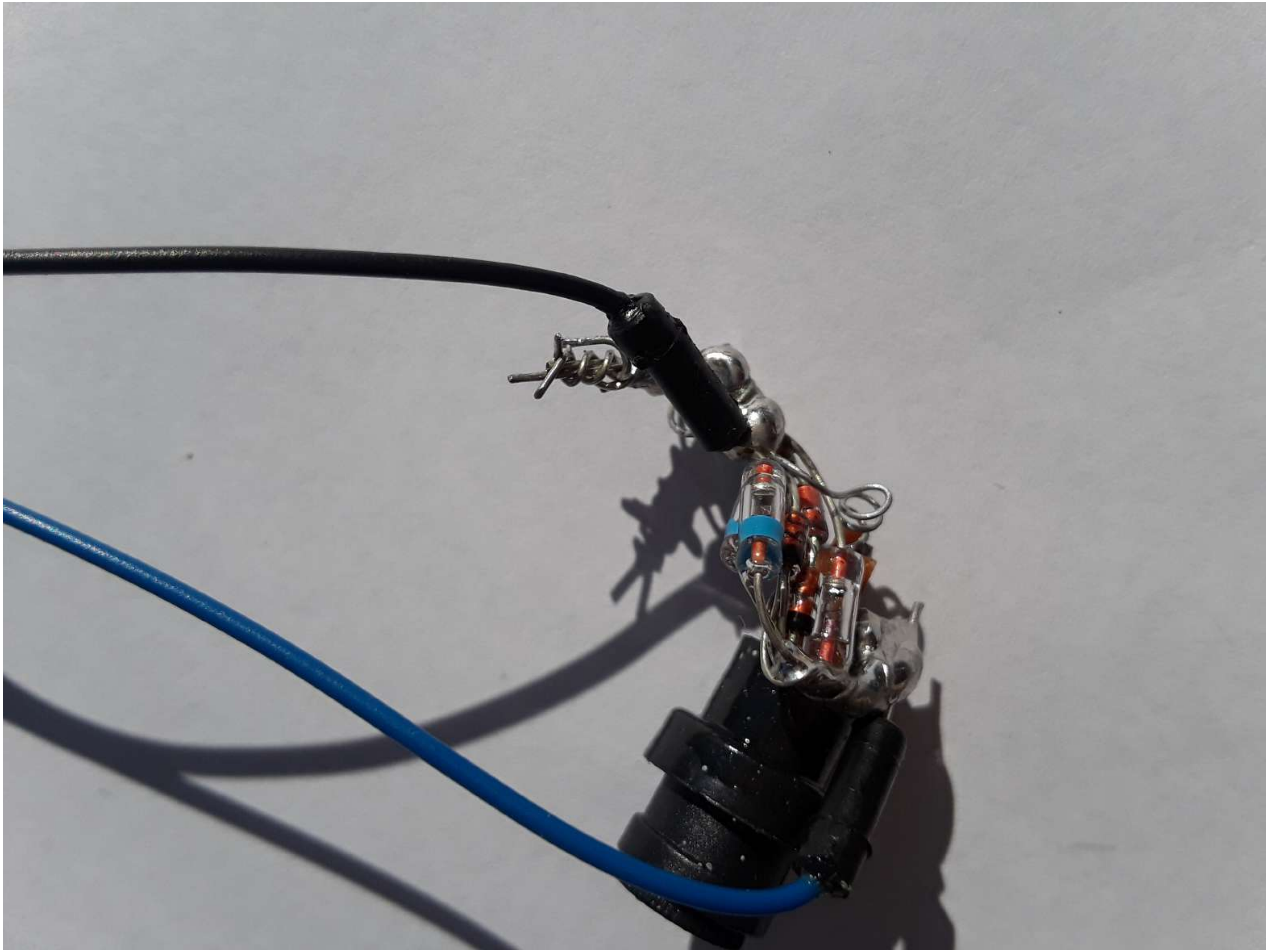

4.7μF

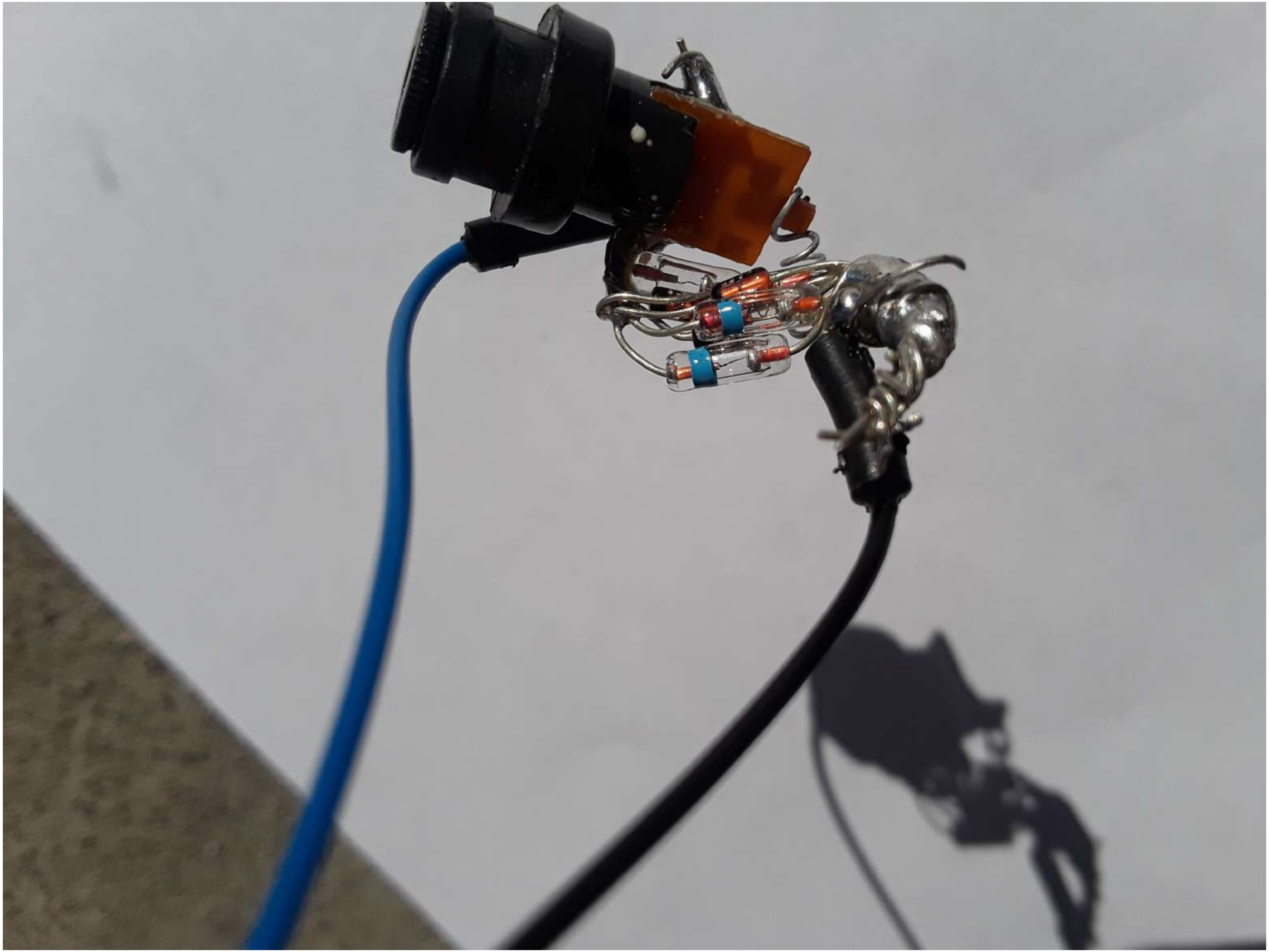


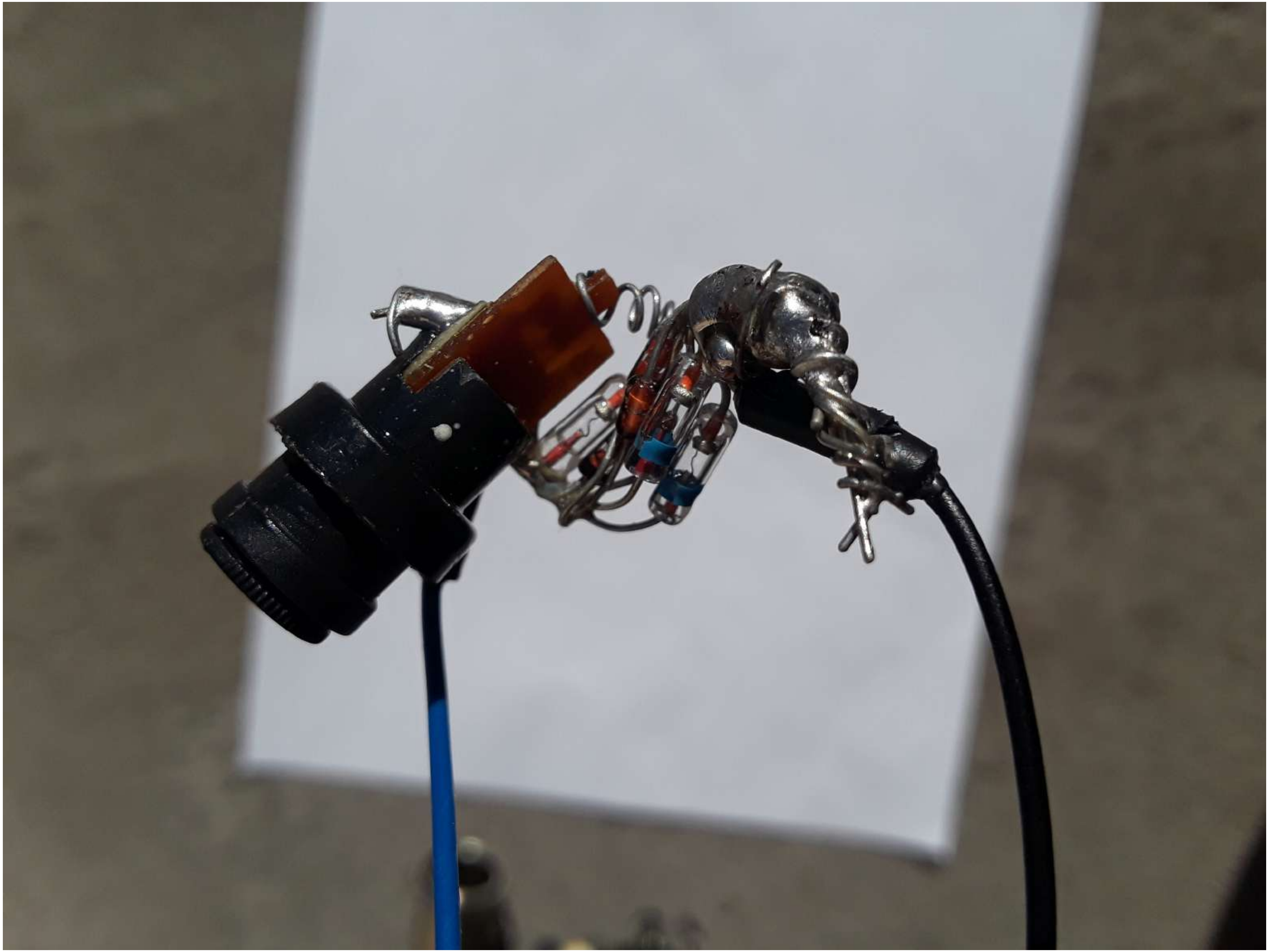

25V
50V
4.7µF

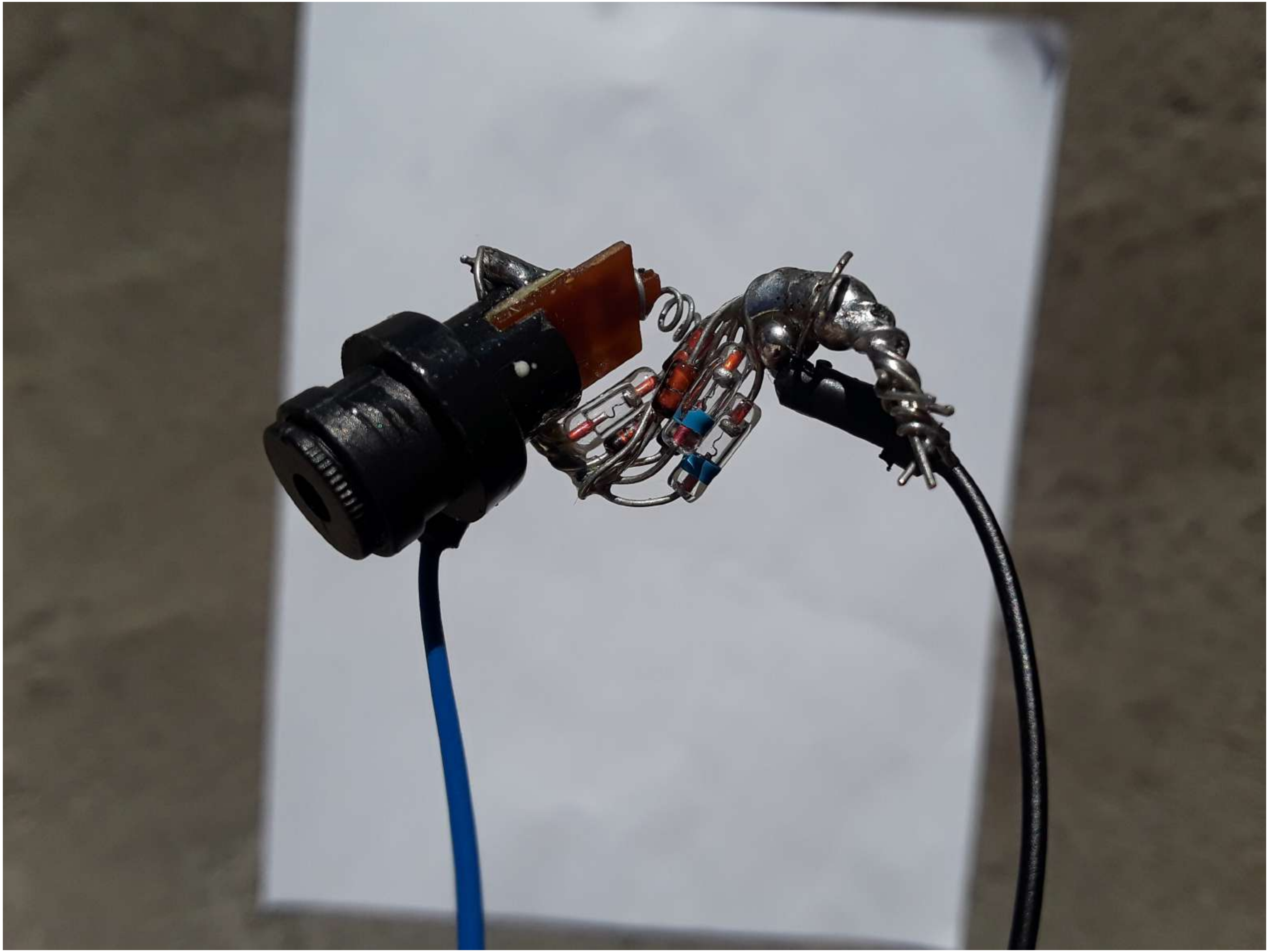

T-04
400V

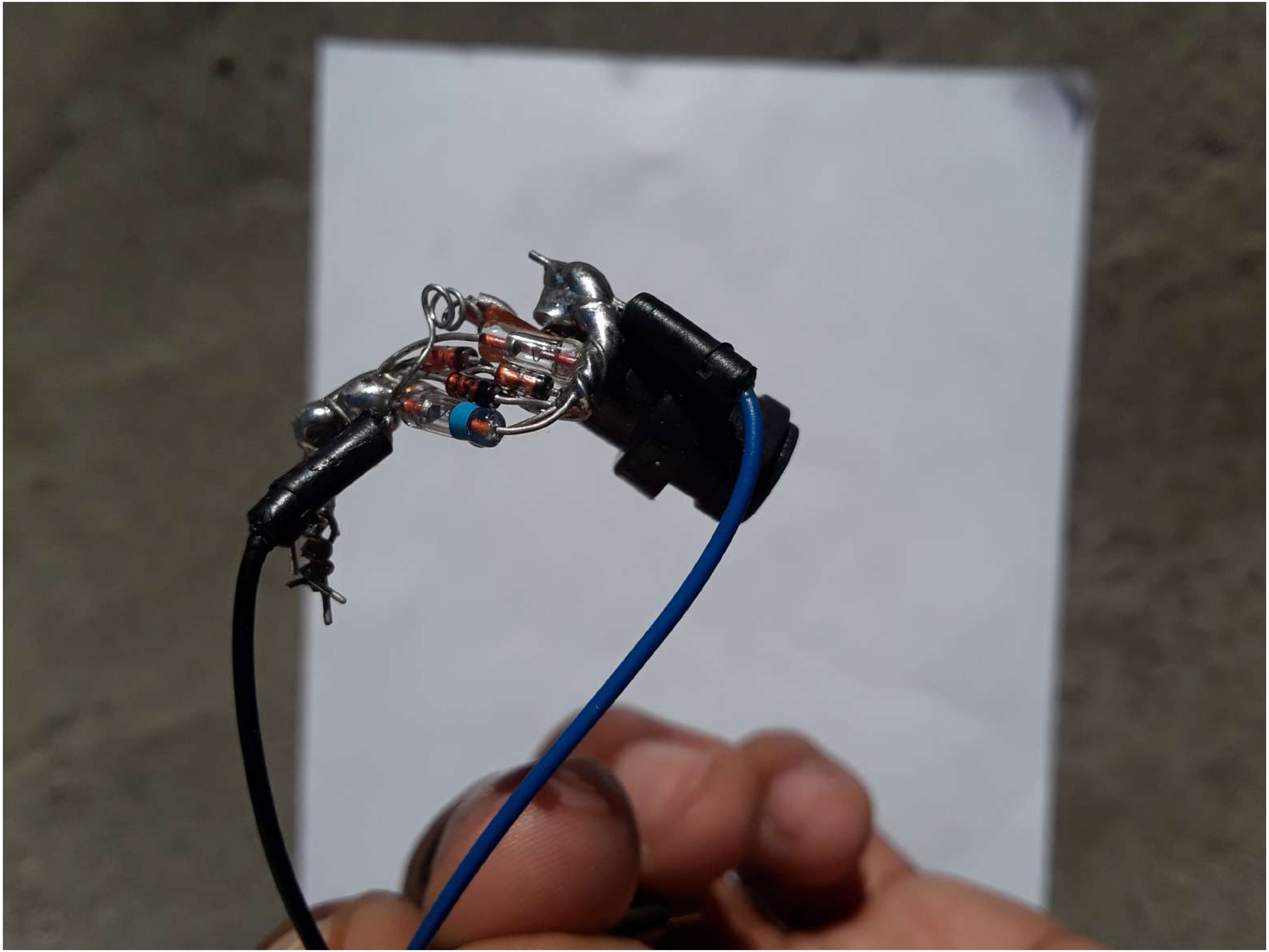


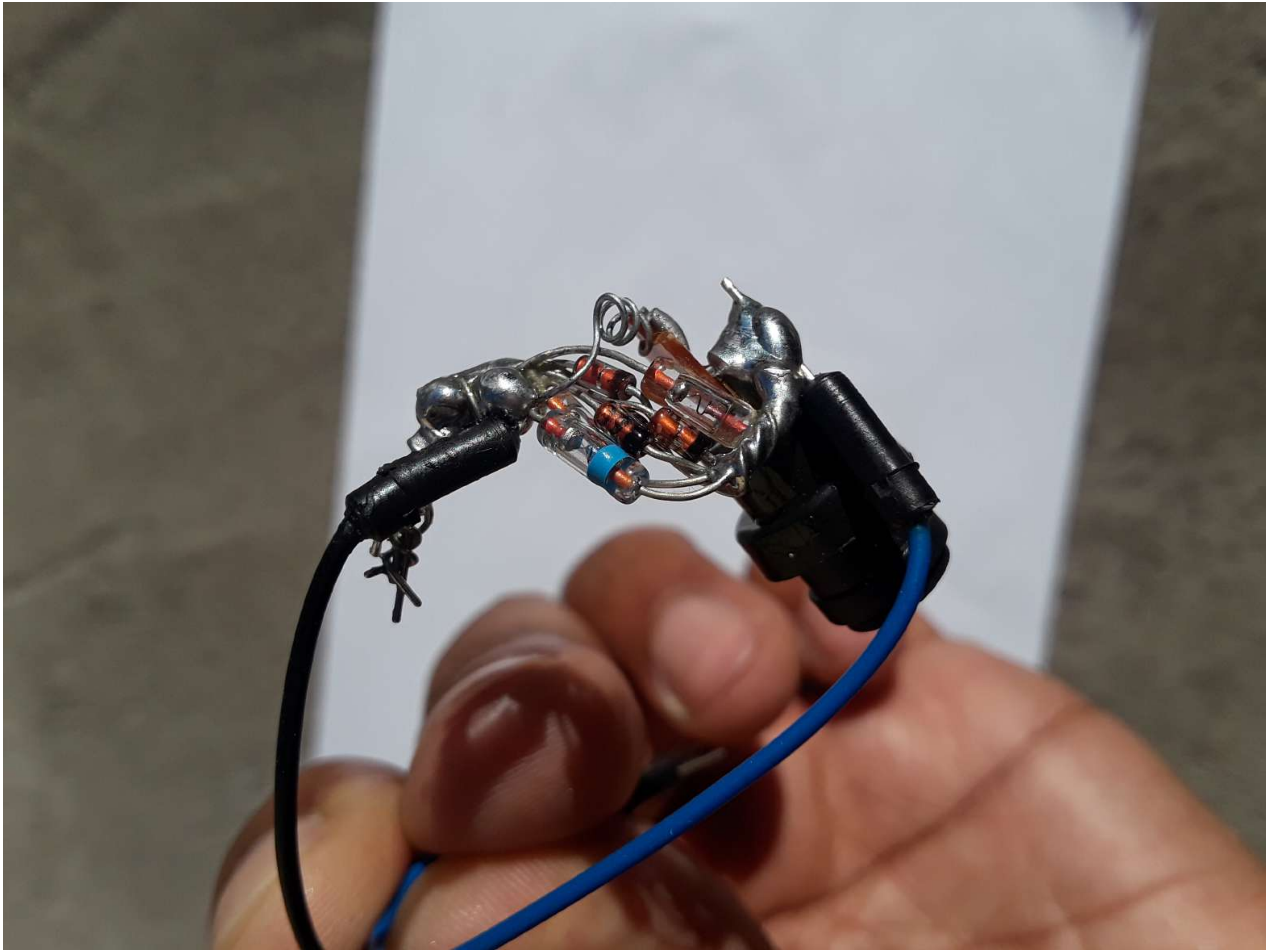


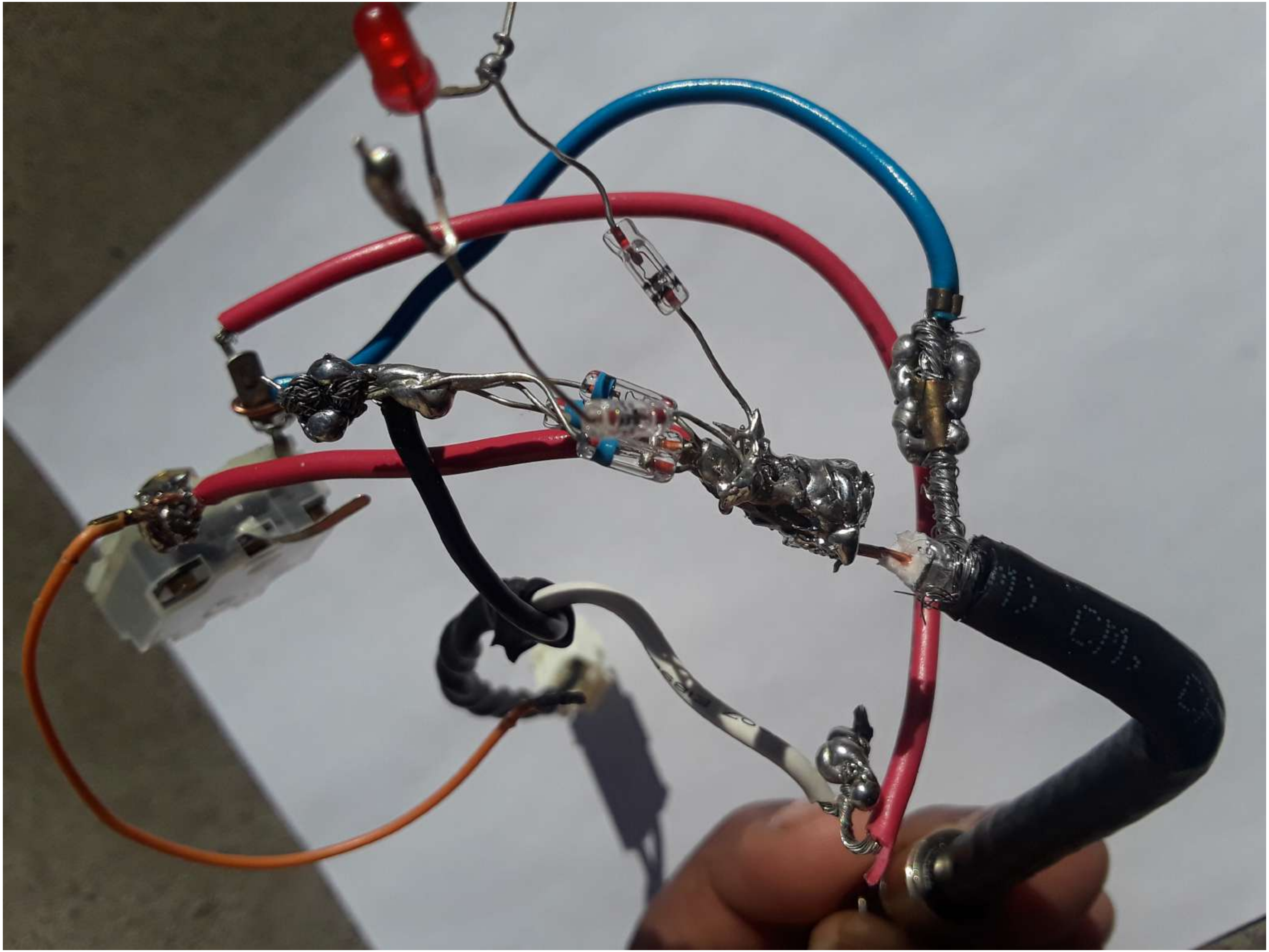


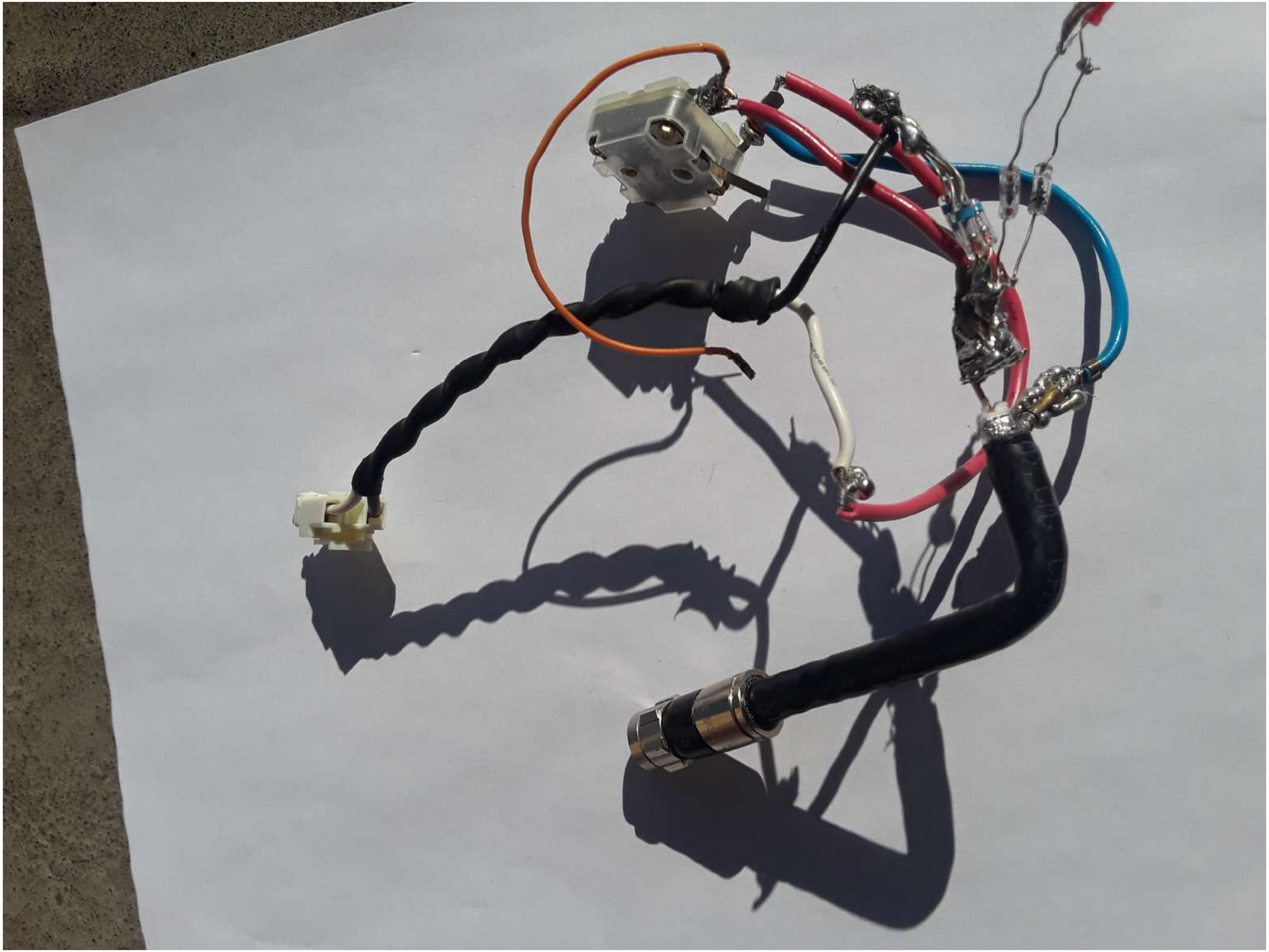


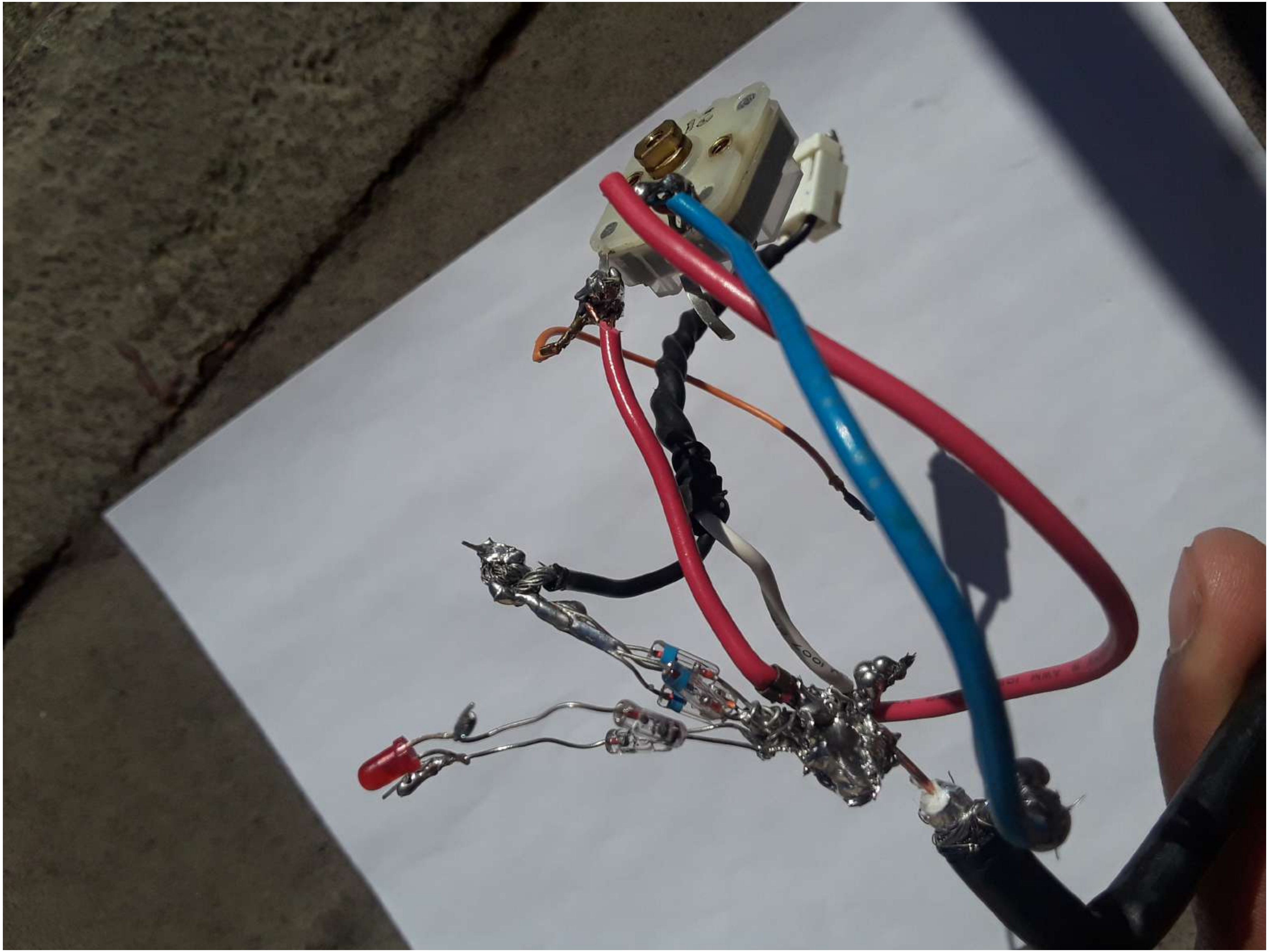


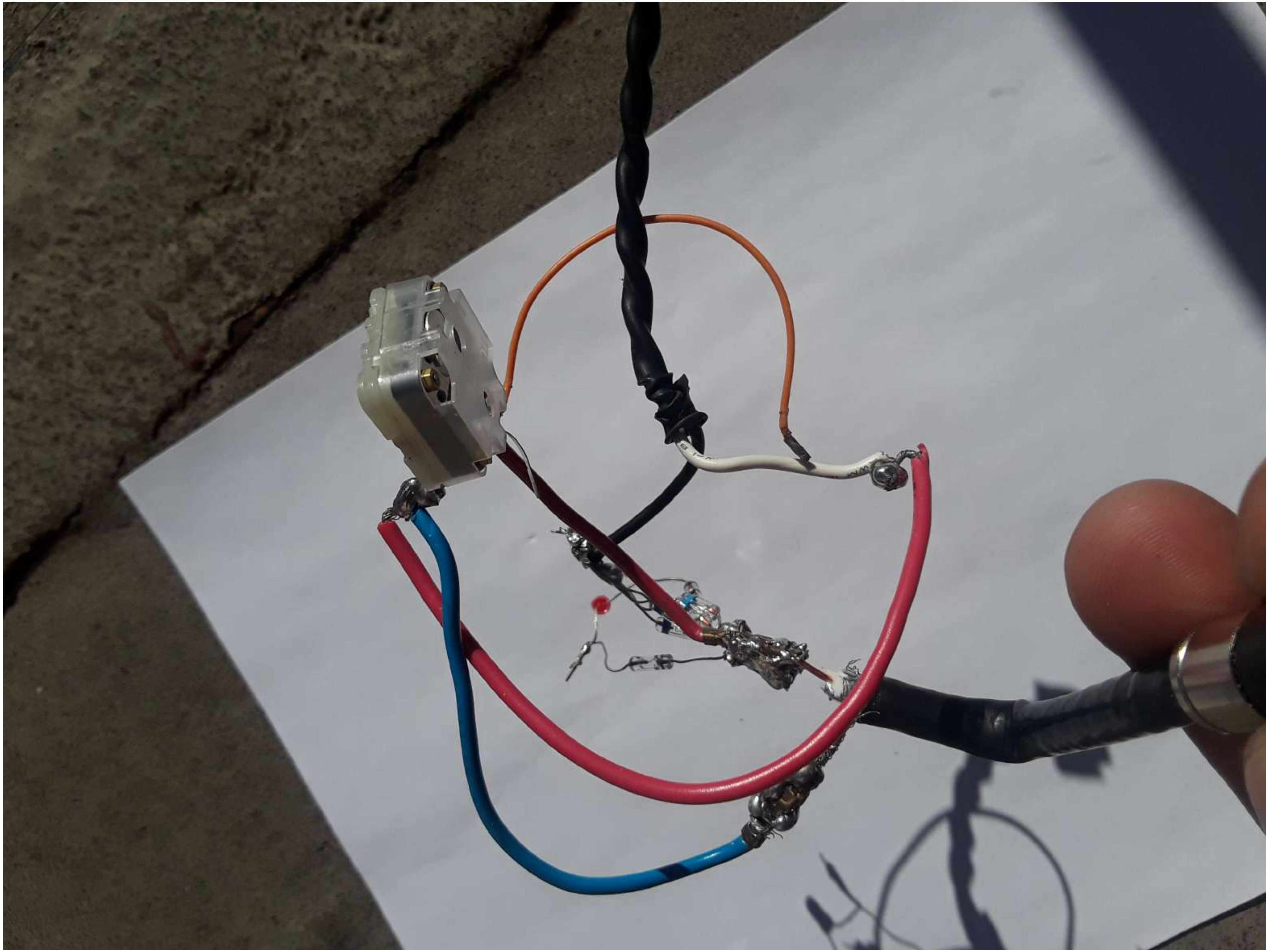


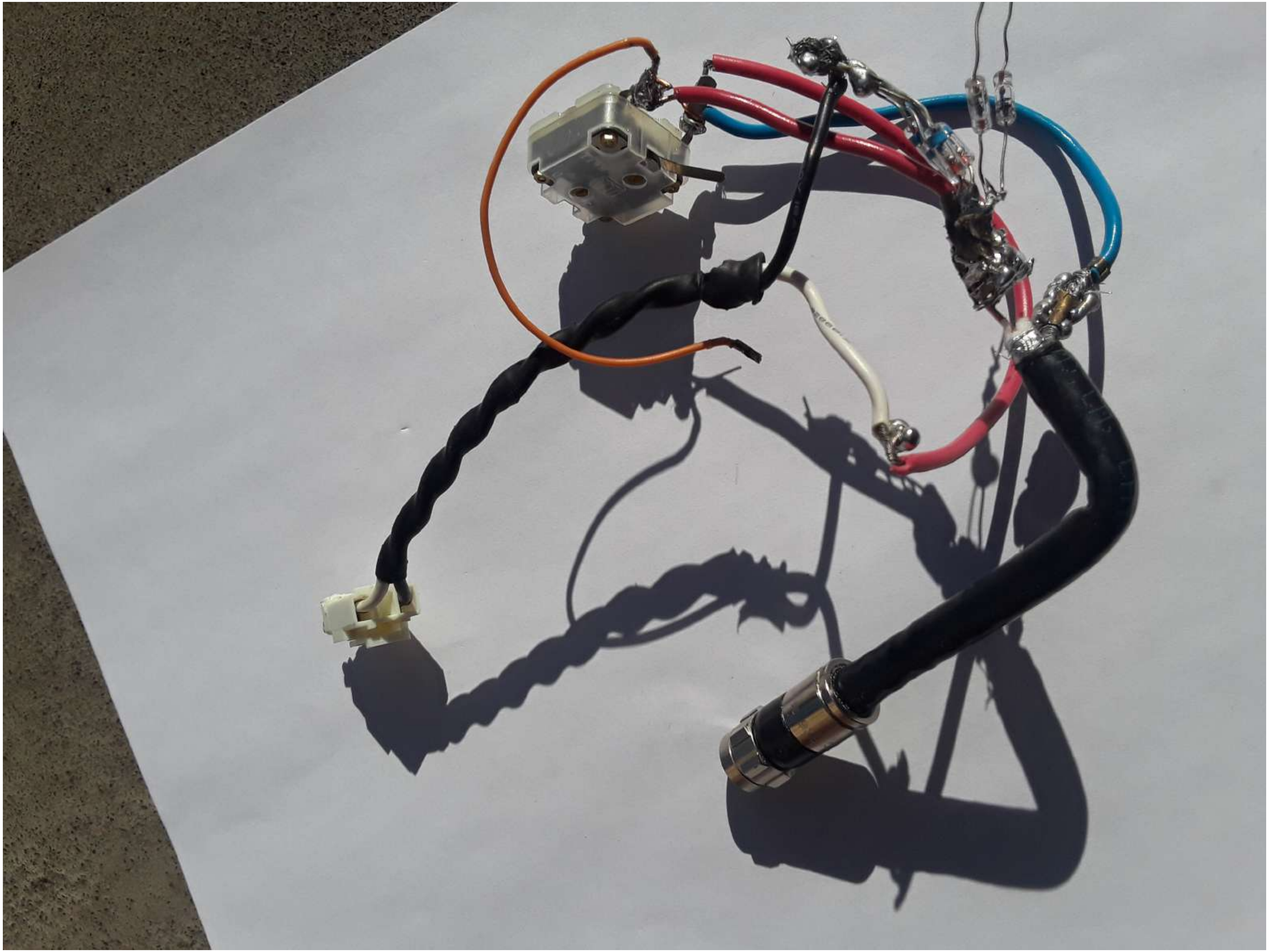


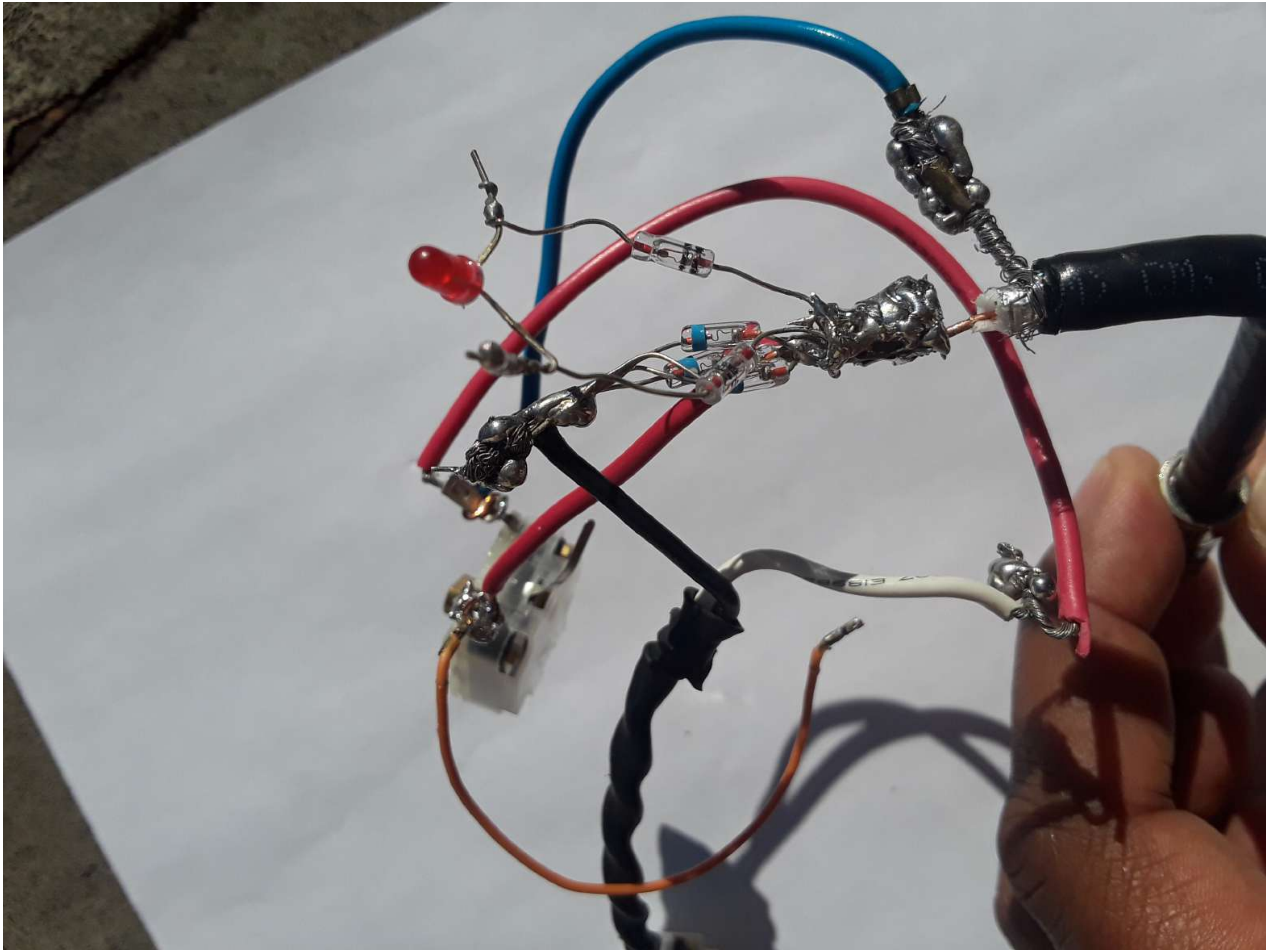




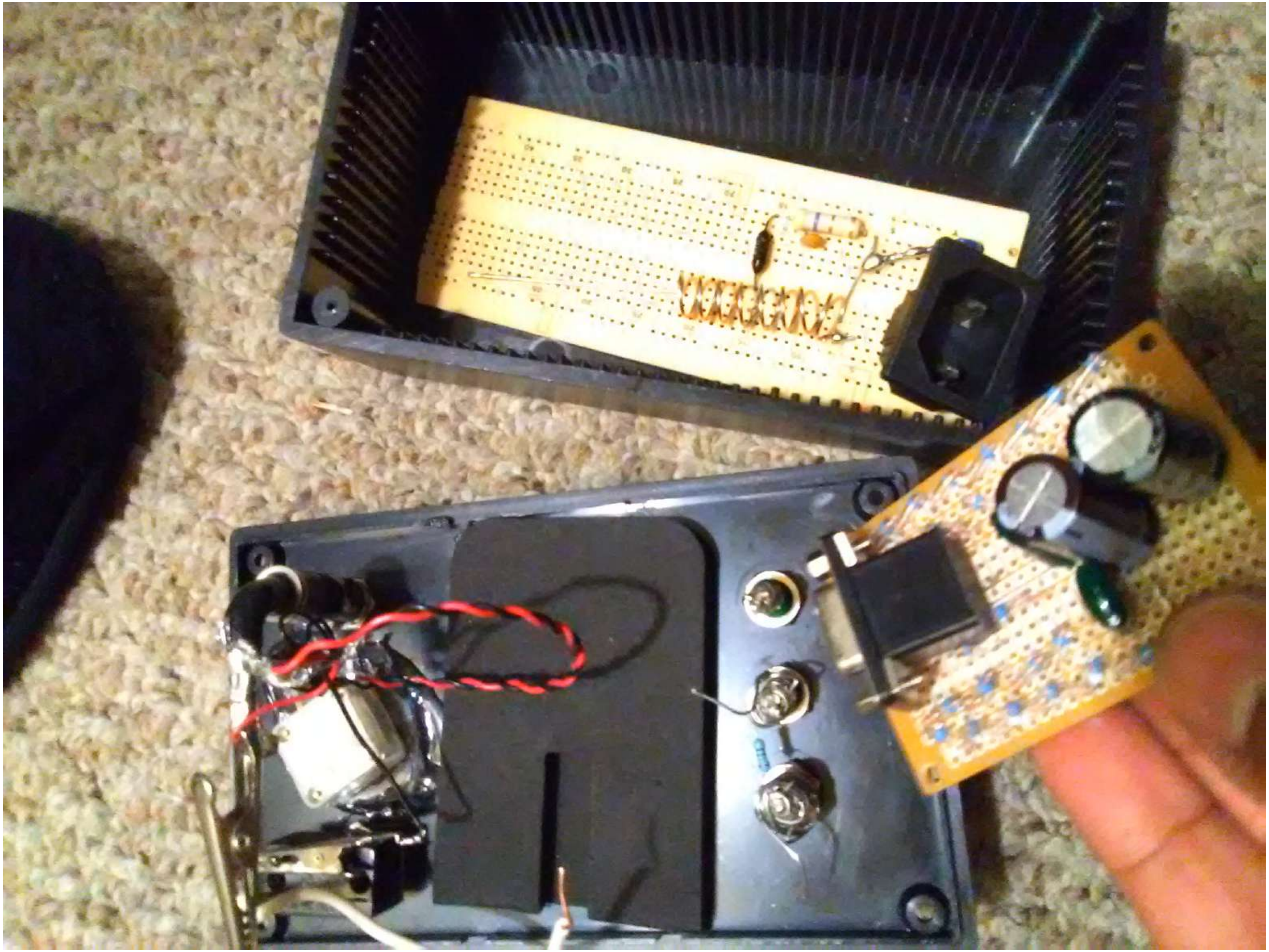









AC POWER
SUPPLY
On
Off
12.6
Volts
AC

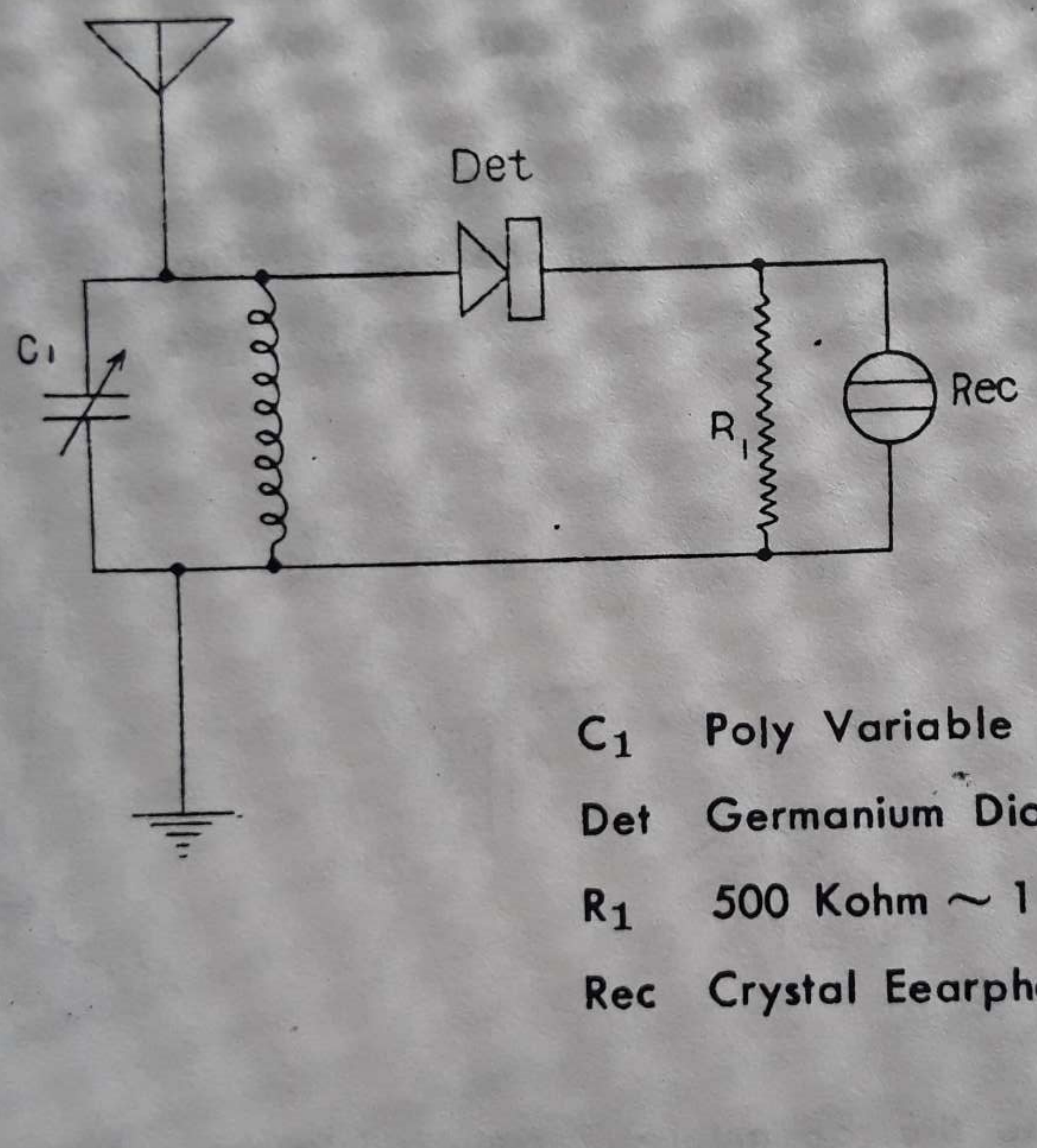



AC

On
Off
AC POWER
SUPPLY
12.6
Volts
AC


16 12 9 8 7 6 5 3
Astra Lark

DIAGRAM



C_1	Poly Variable Condenser
Det	Germanium Diode
R_1	500 Kohm ~ 1 Megohm
Rec	Crystal Eearphone

Printe

LARK PT-8
NON BATTERY GERMANIUM RADIO

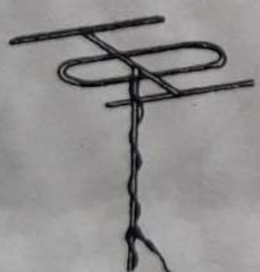
This radio is operated by a germanium diode and has a high "Q" tuner that provides a much clearer reception than that of the old type crystal sets.

FEATURES :

1. LARK PT-8 Features a germanium diode which eliminates having to replace a dry battery.
2. The LARK PT-8 should last for age provided it is not dropped or ill-treated in any way.
3. The LARK PT-8 is ideal on picnic, the beach, the home or even at the office to heur your favorite program without disturbing others.

NOTE :

Since radio waves are weak in concrete buildings, install a simple antenna on the roof or attatch the alligator clip to T.V. antenna.

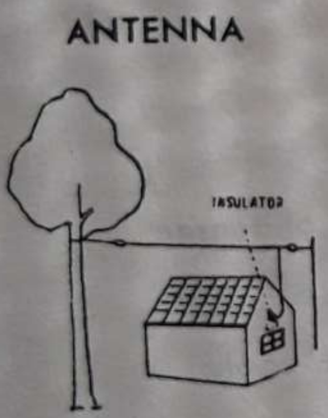


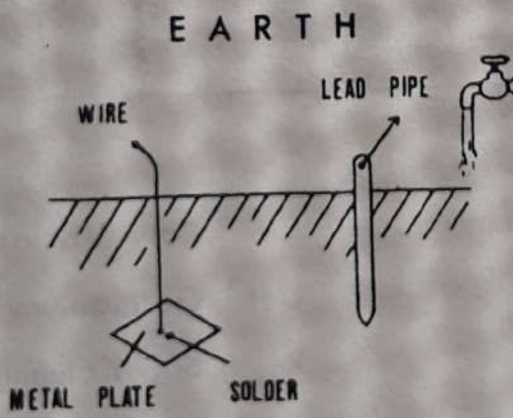

TRUCTIONS :

Use the wire with plug and alligator clip. Place the plug into the antenna Jack and attatch the clip to end of the following;

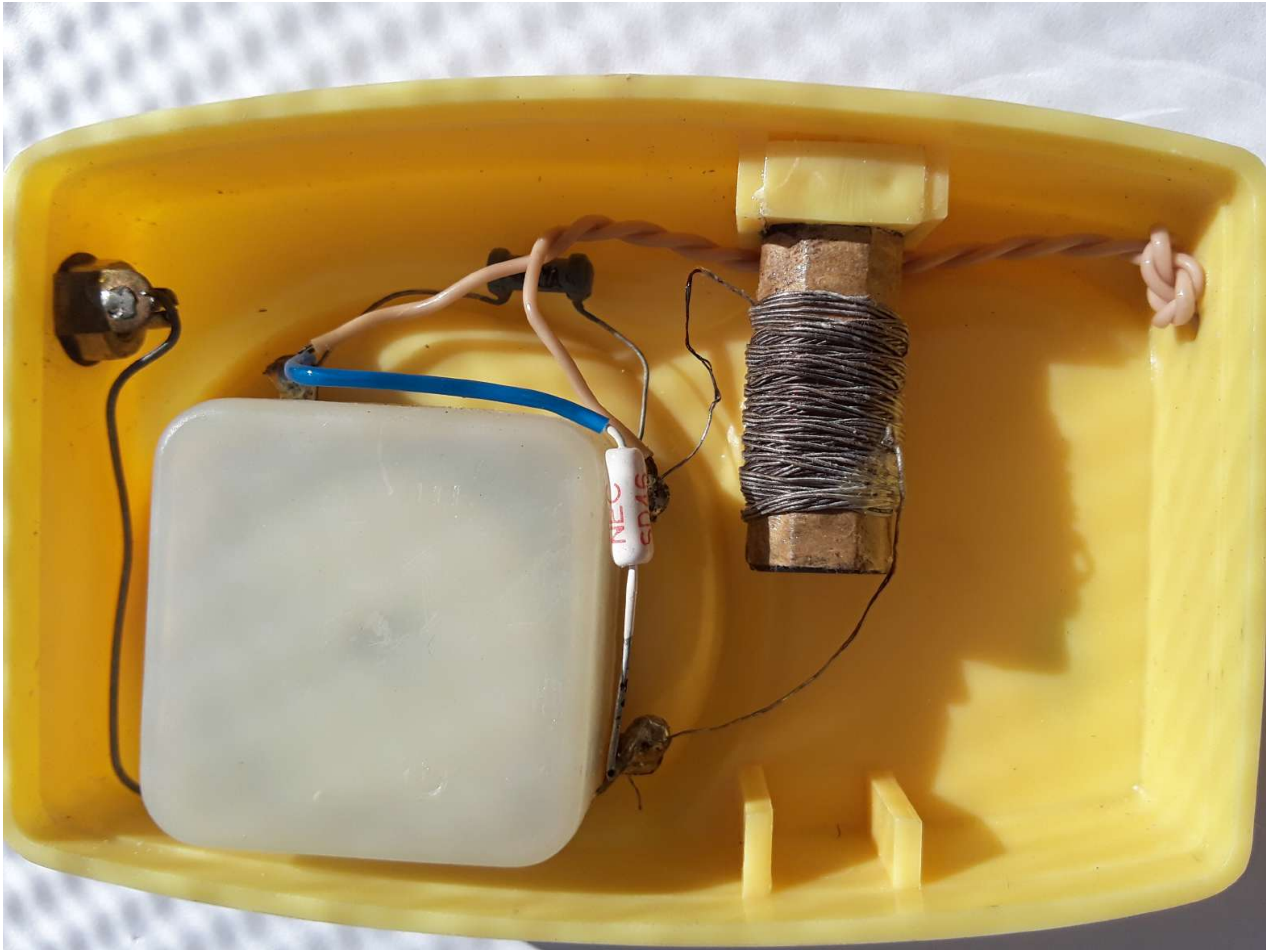
For Indoors : 1. The metal finger guard on a telephone.

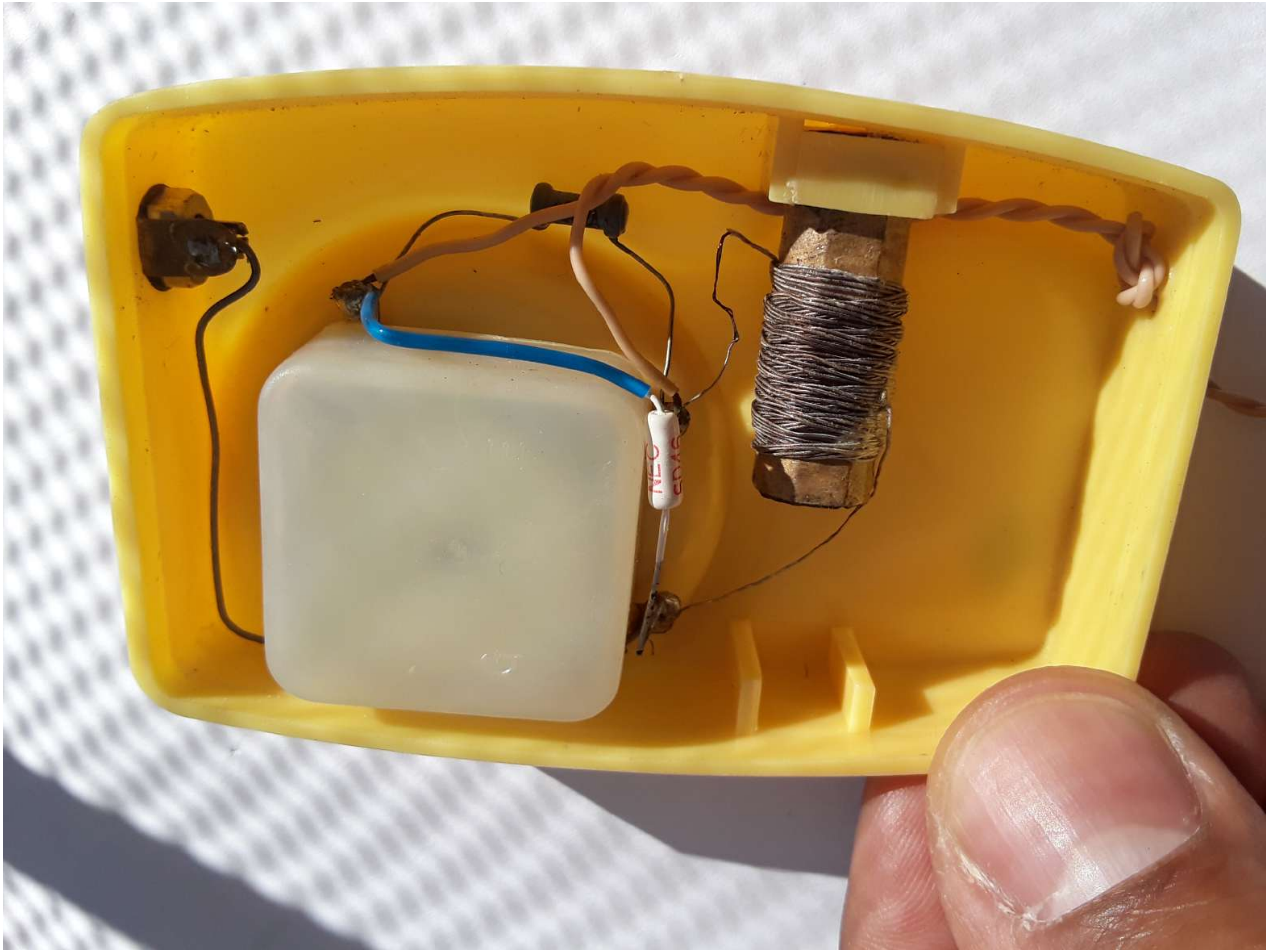
2. T.V. or radio antenna.
3. The metal framework of a connected lamp.
4. If you are far from the broadcasting station use the regular antenna and earth as illustrated below.

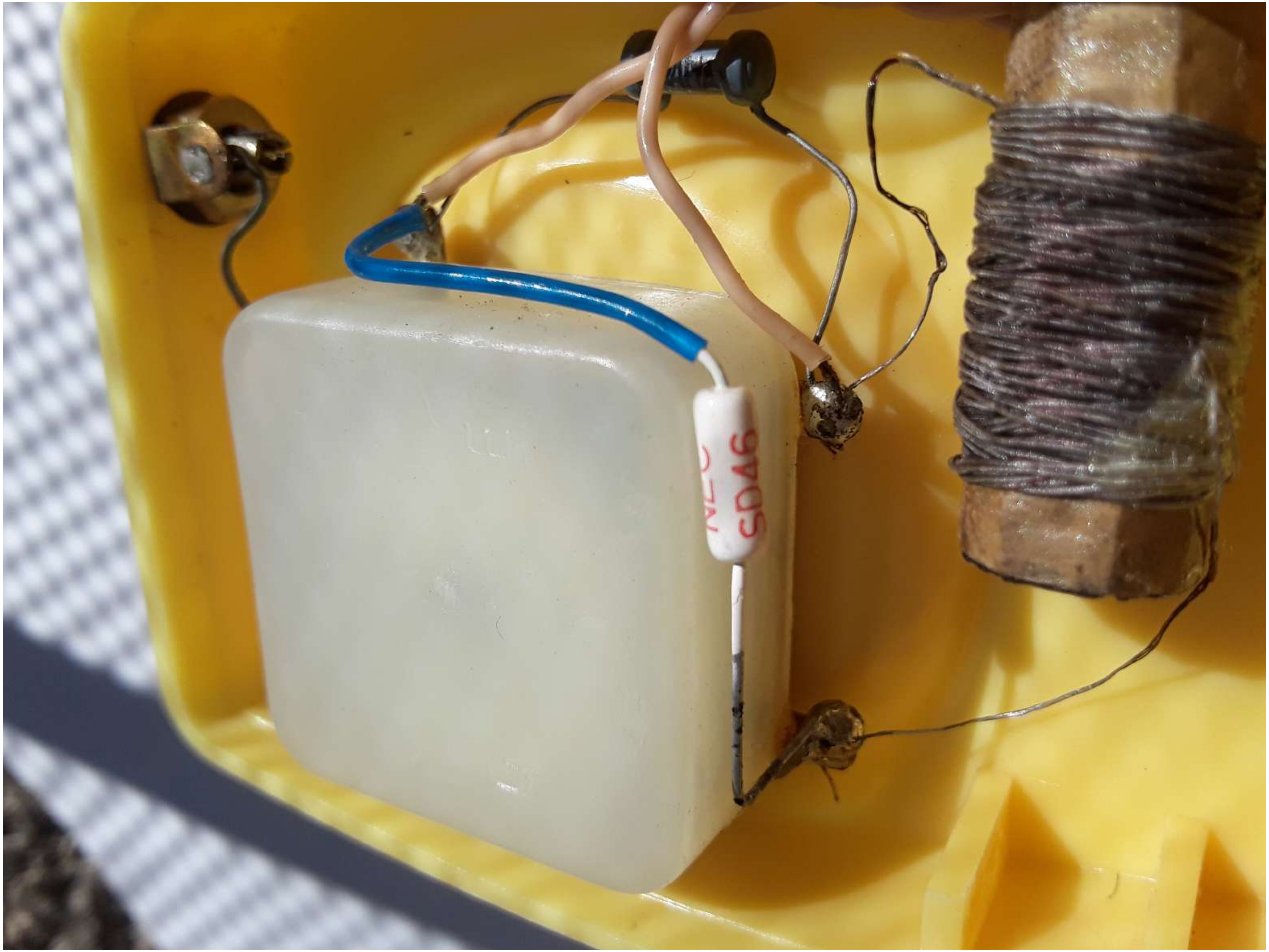


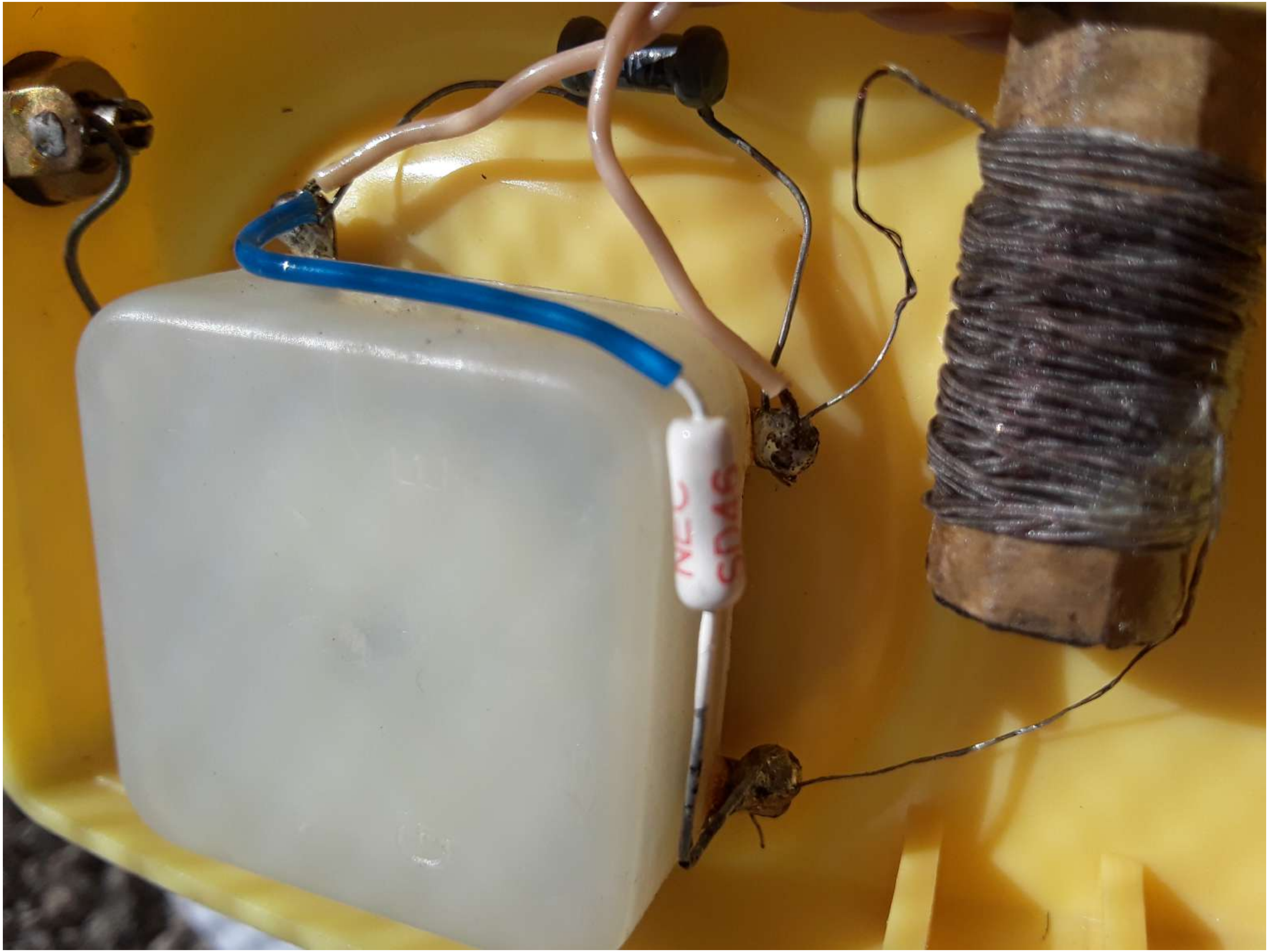


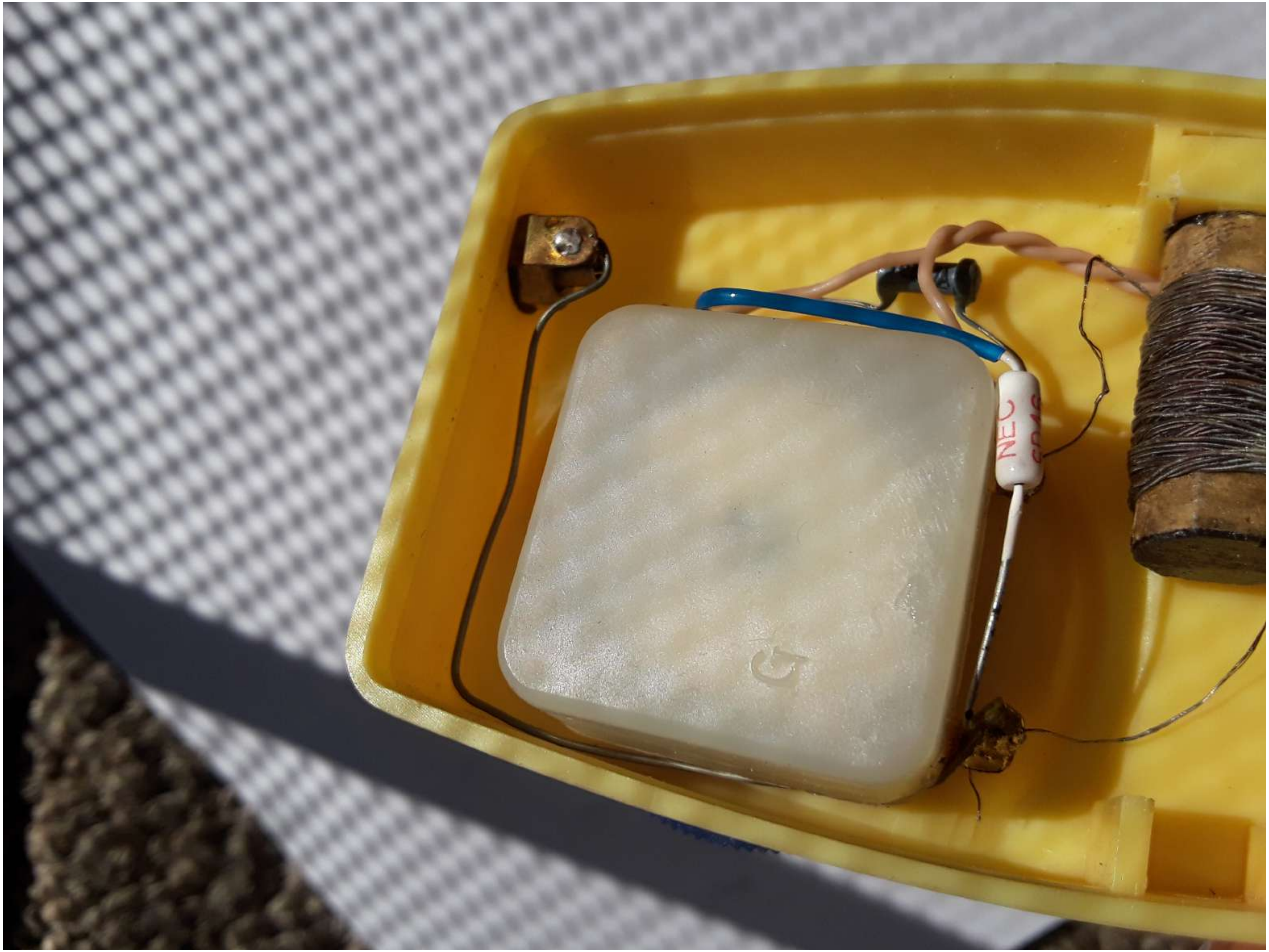
For outdoors : Use the rod antenna, screw it into the antenna jack and pull it out to its full length.

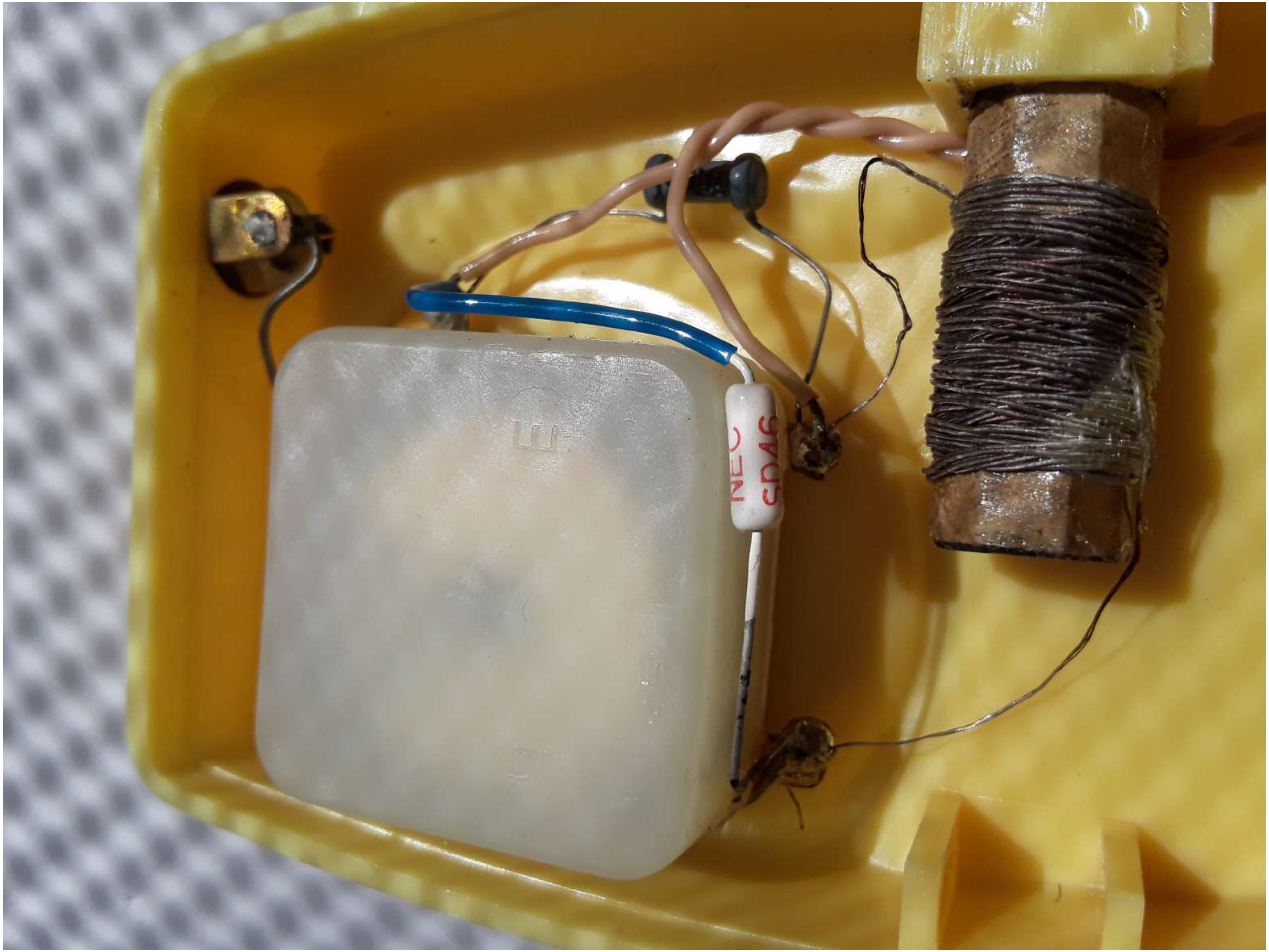

NEC
SD46

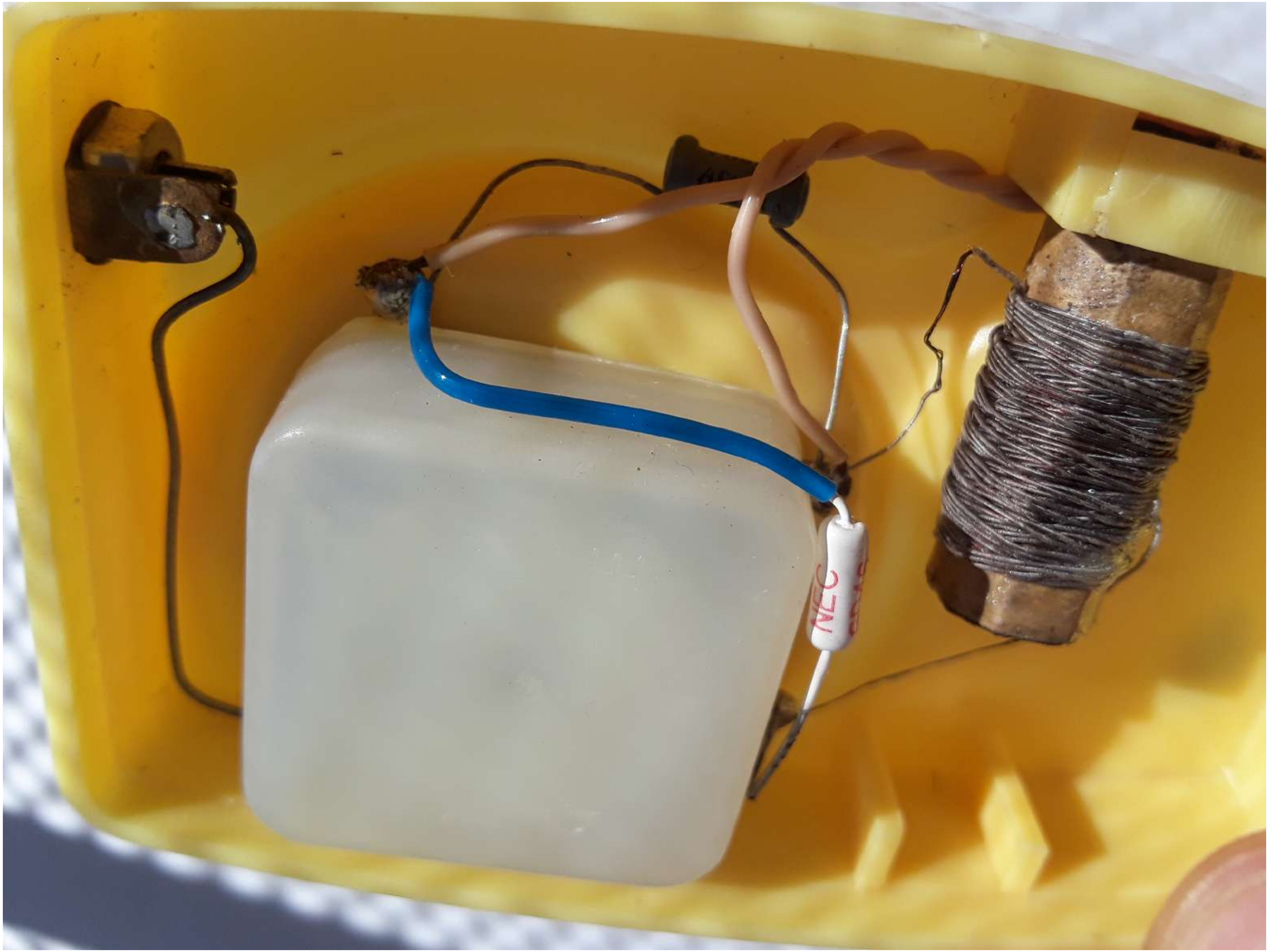


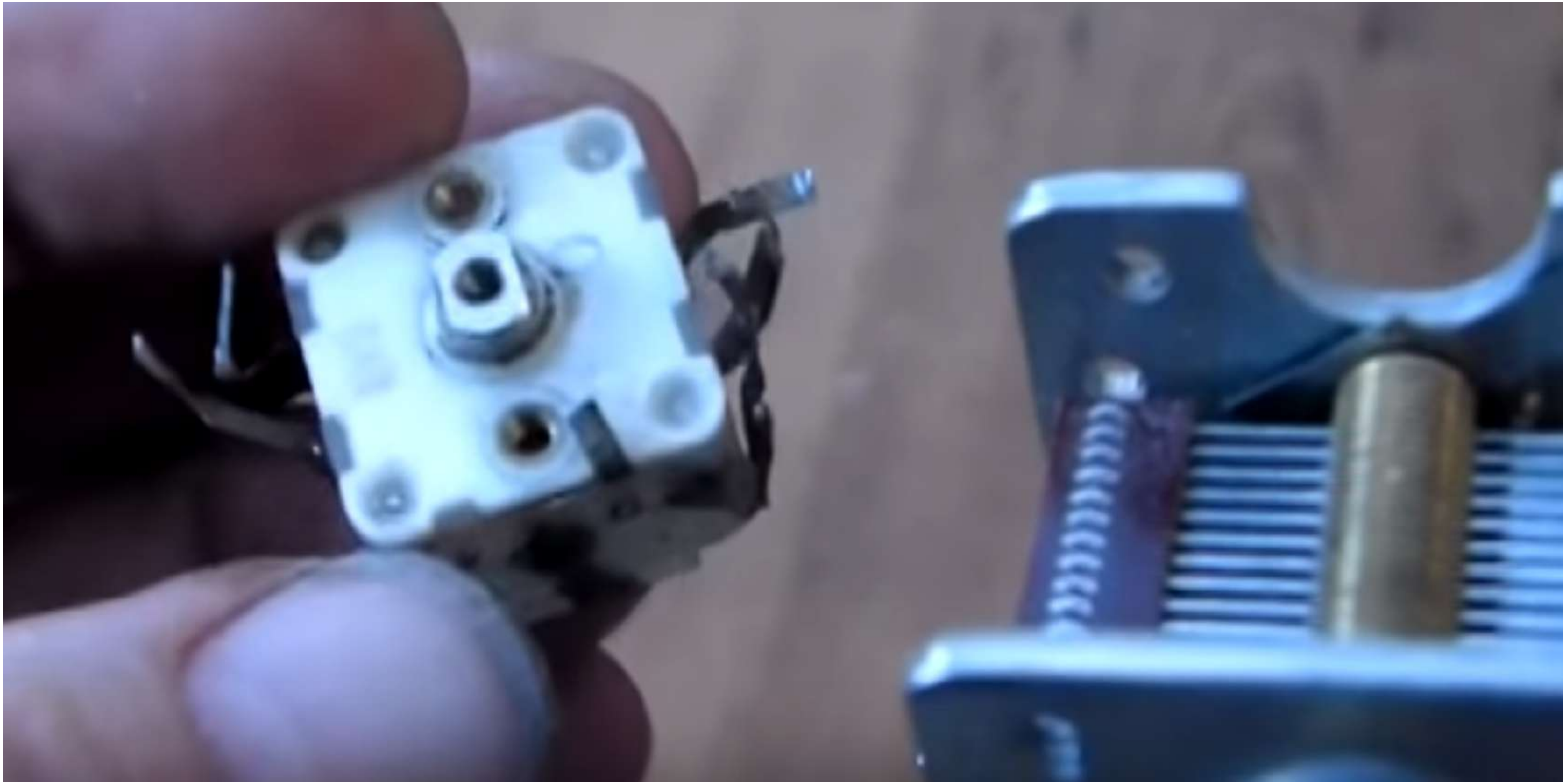

SD46

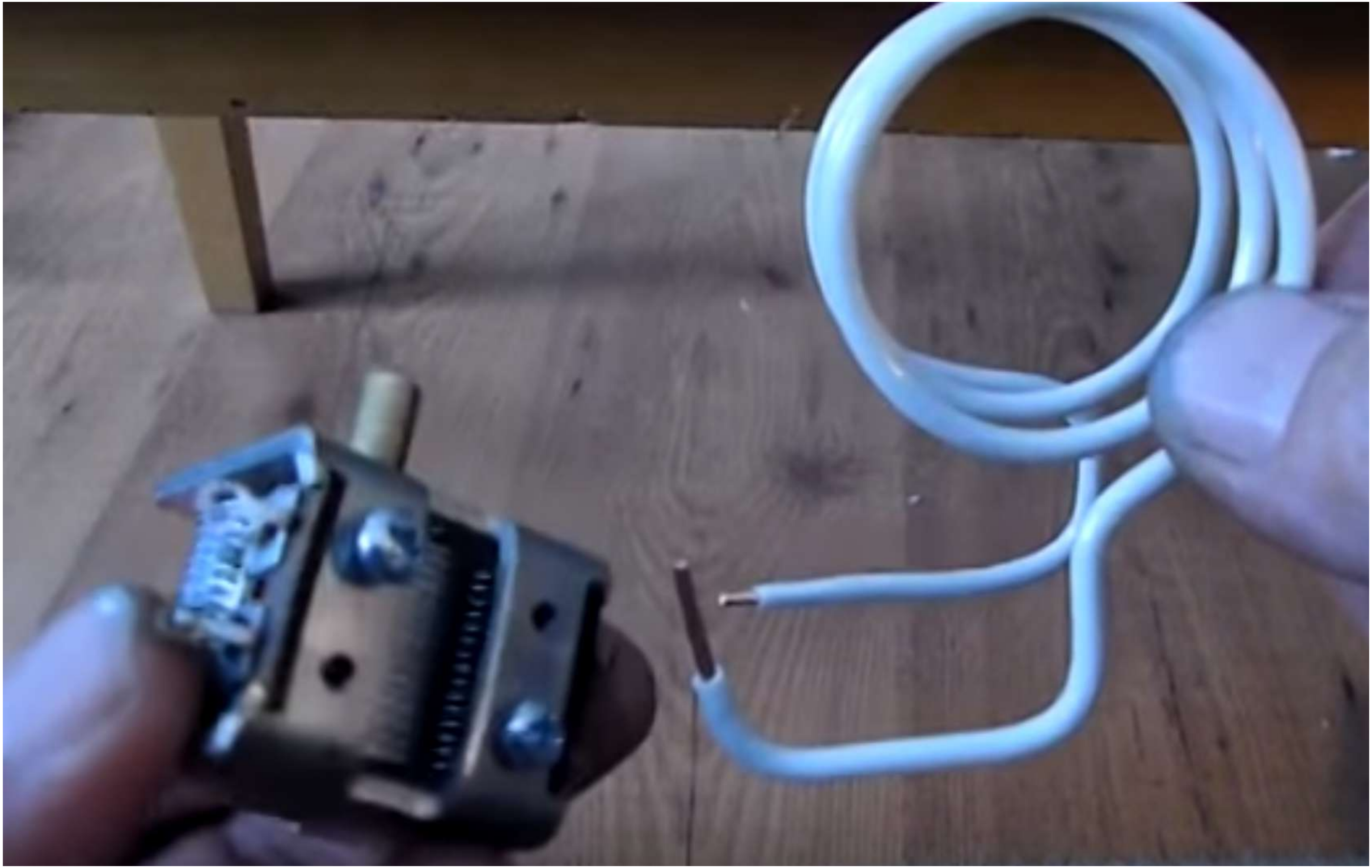

NEC


NEC


NEC
SDA6


NEC






8:54 / 13:14


4:30 / 13:14

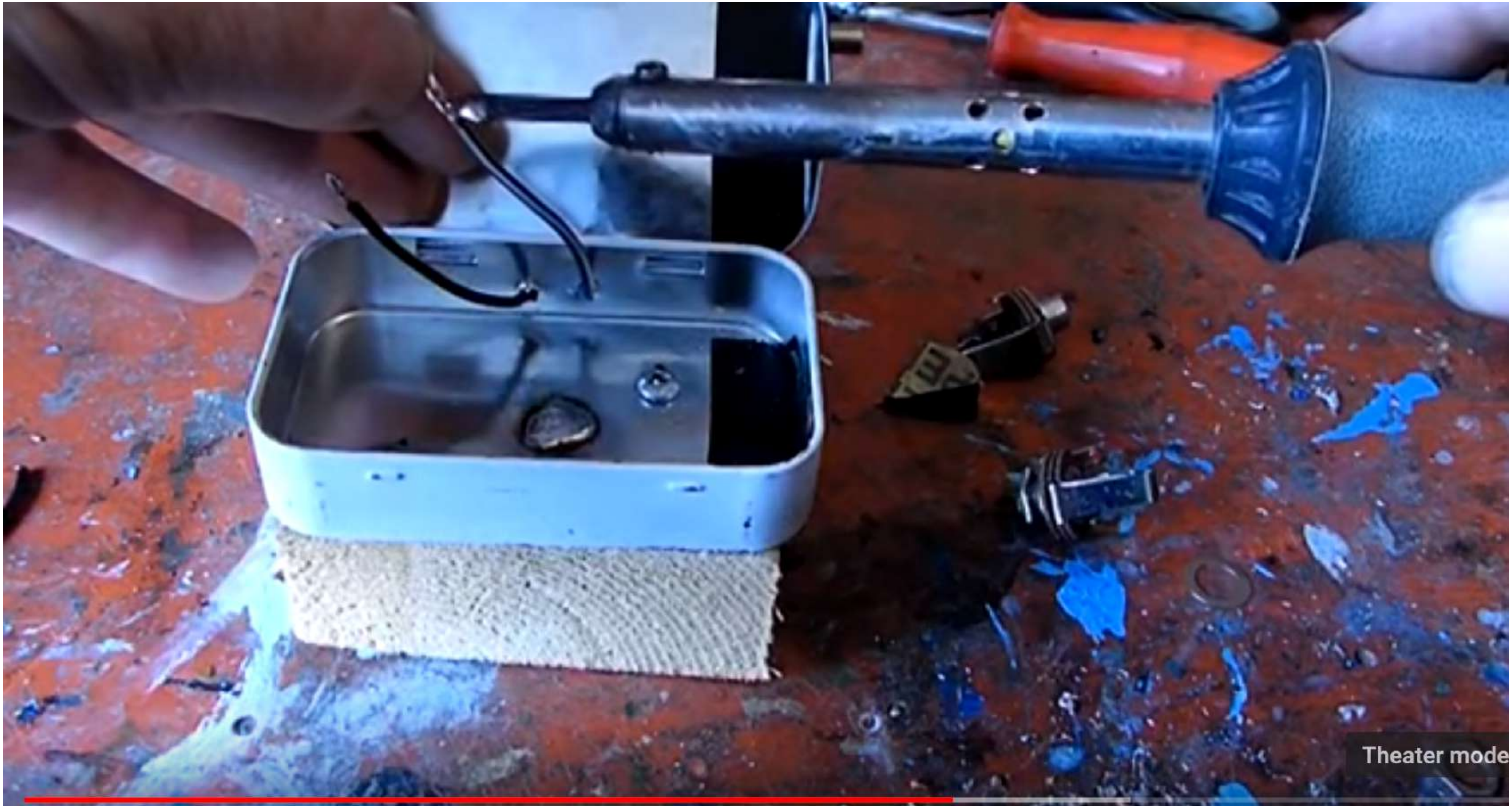

The Original Celebrated
CURIOUSLY STRONG
PEPPERMINT
MENTHE
7:37 / 13:14


I have heard stations from Alaska, Hawaii,
California, New York, Chicago and Florida.
ALTOIDS
12:03 / 13:14


6:26 / 13:14


10:58 / 13:14


antenna required. Just a random
wire antenna. Mine is


Theater mode


12:01 / 13:14

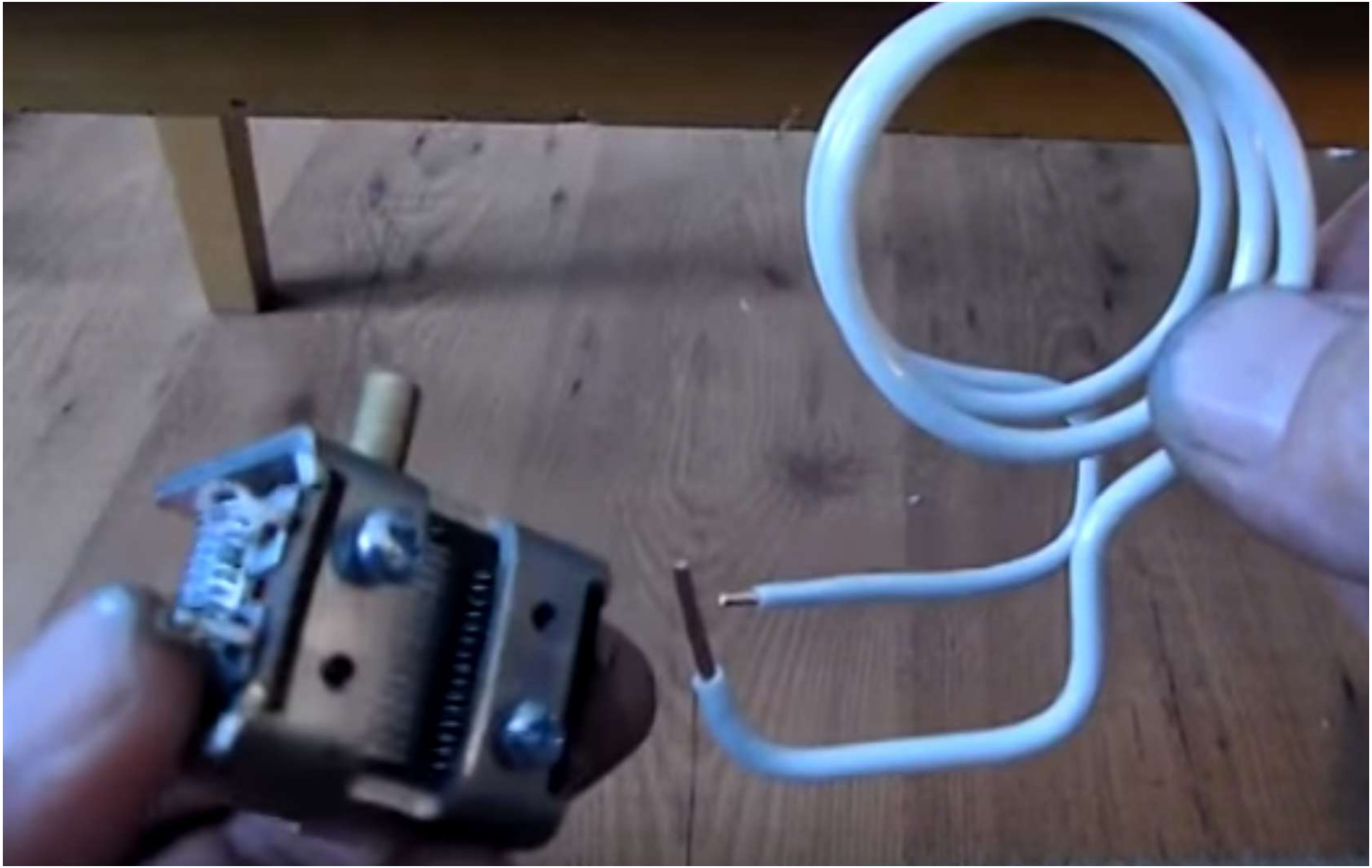

alive just like it did in the 70s.


8:29 / 13:14


It could overload or fry yor amp.


antenna required. Just a random le
wire antenna. Mine is 70 feet long.
11:56 / 13:14


8:40 / 13:14

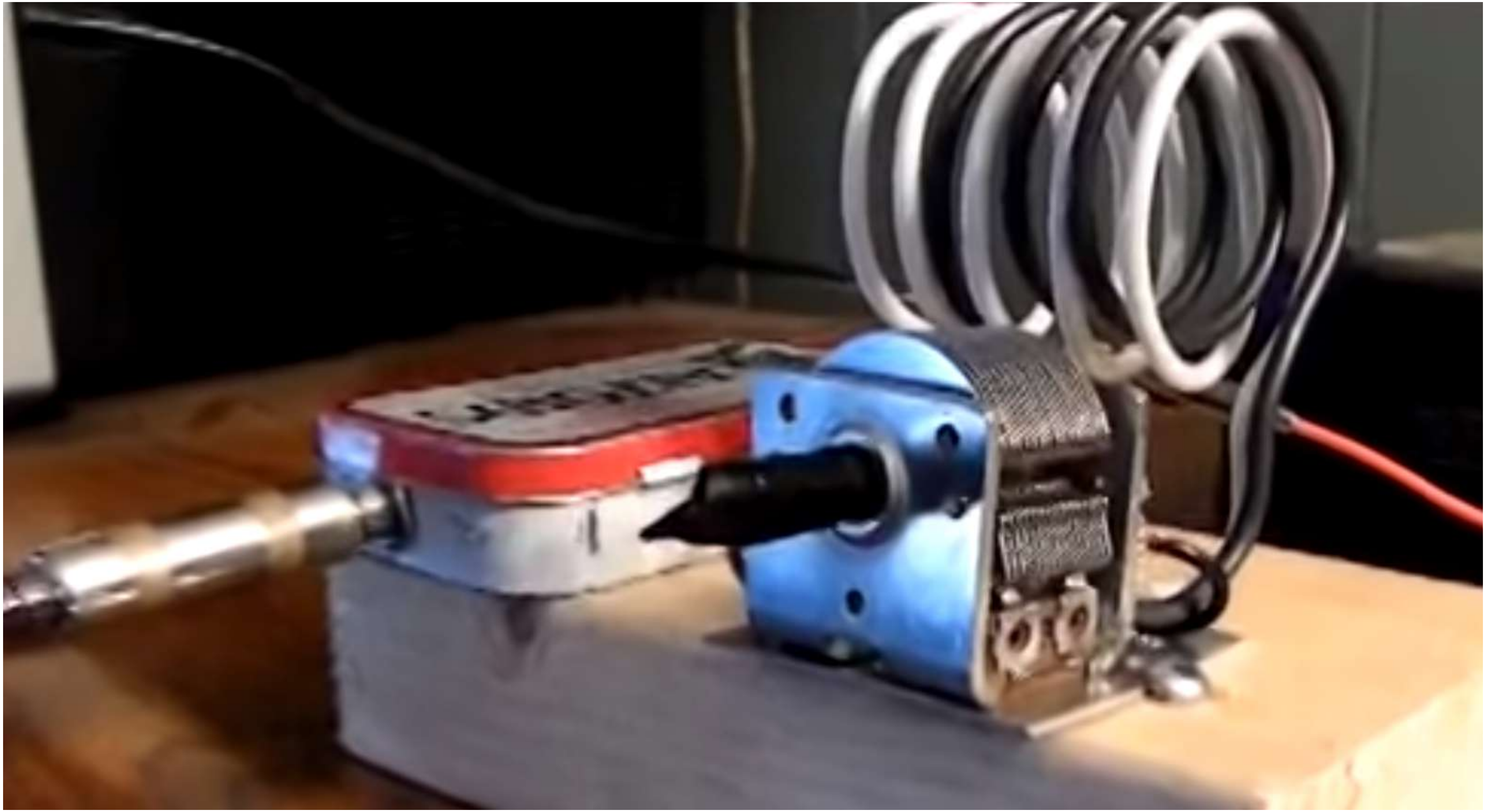


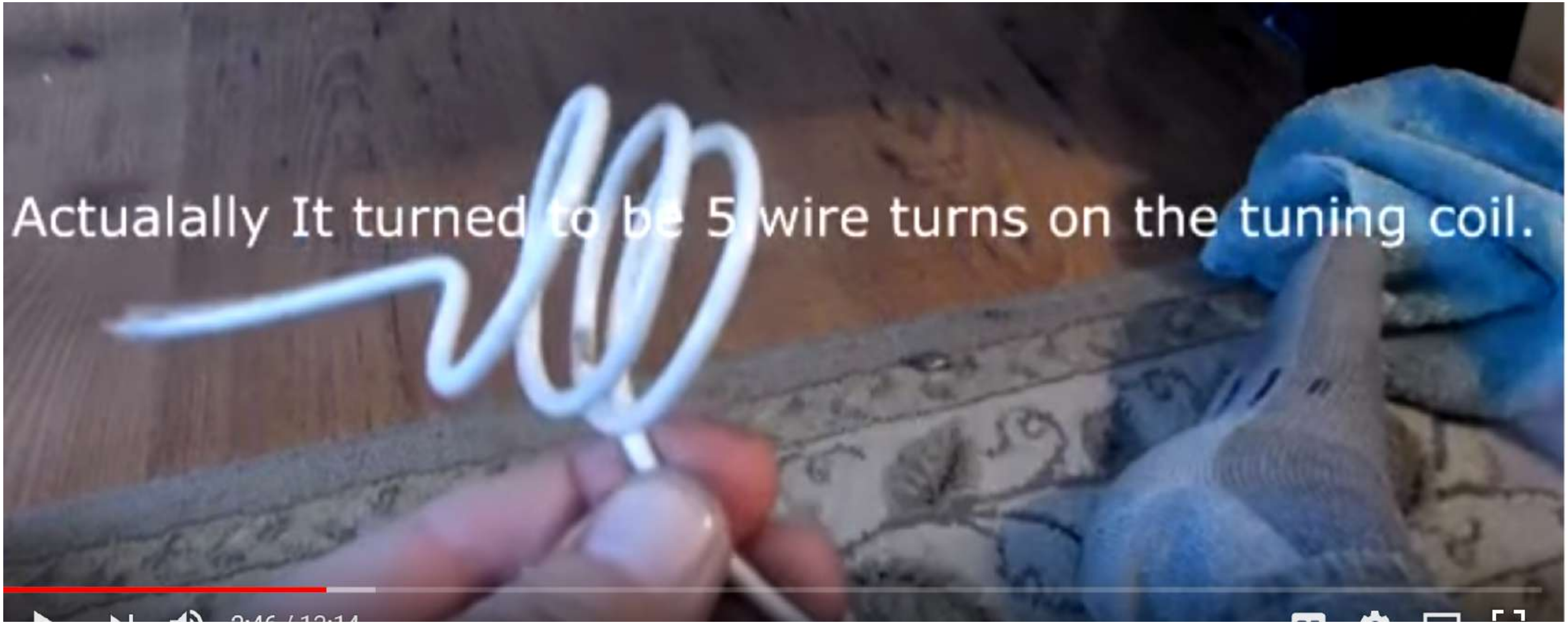

8:54 / 13:14


I have heard stations from Alaska, Hawaii,
California, New York, Chicago and Florida.
ALTOIDS
12:03 / 13:14


6:26 / 13:14


4:11 / 13:14
CC

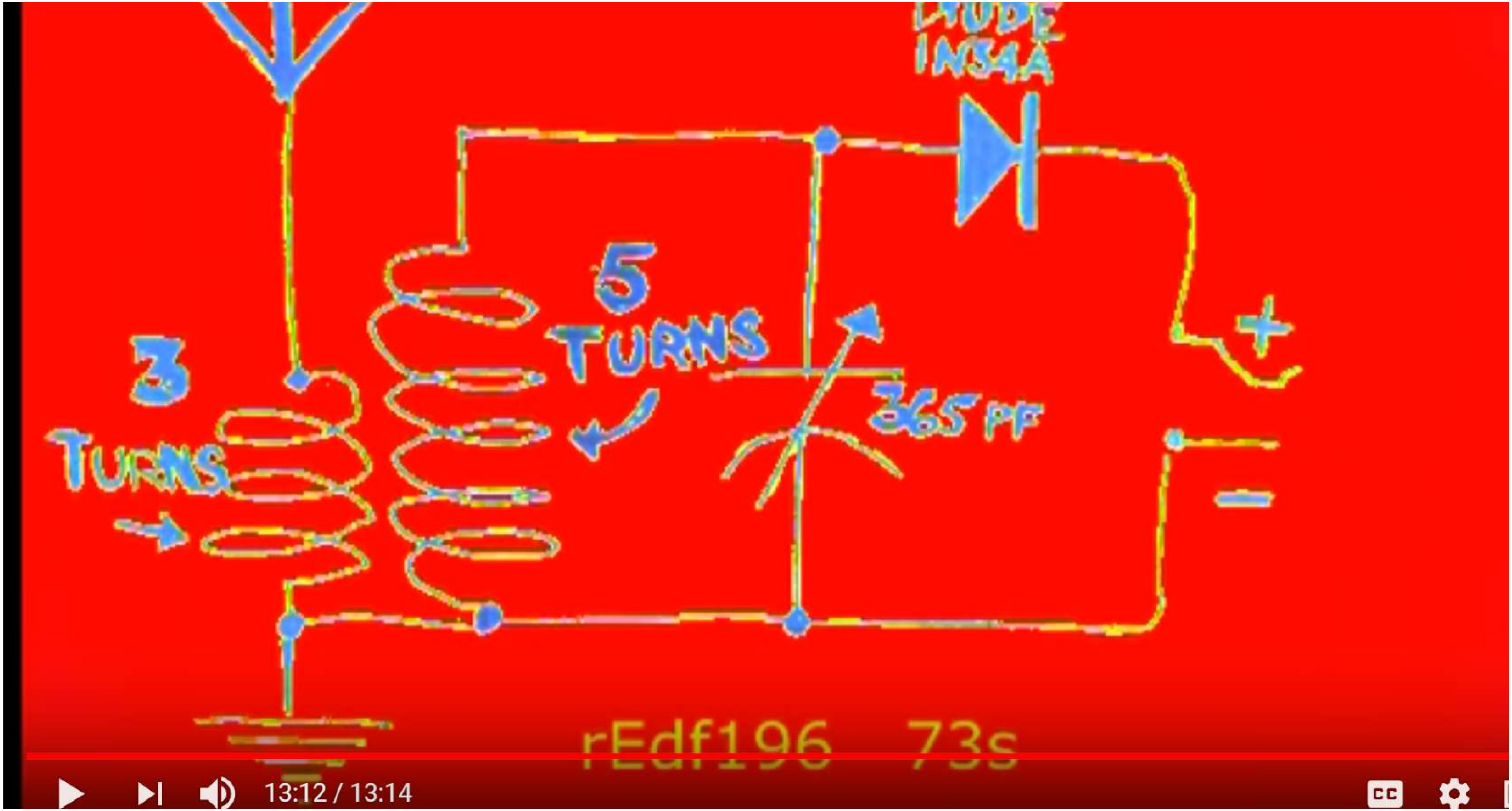



Actualally It turned to be 5 wire turns on the tuning coil.


ULTRA


4:11 / 13:14
CC

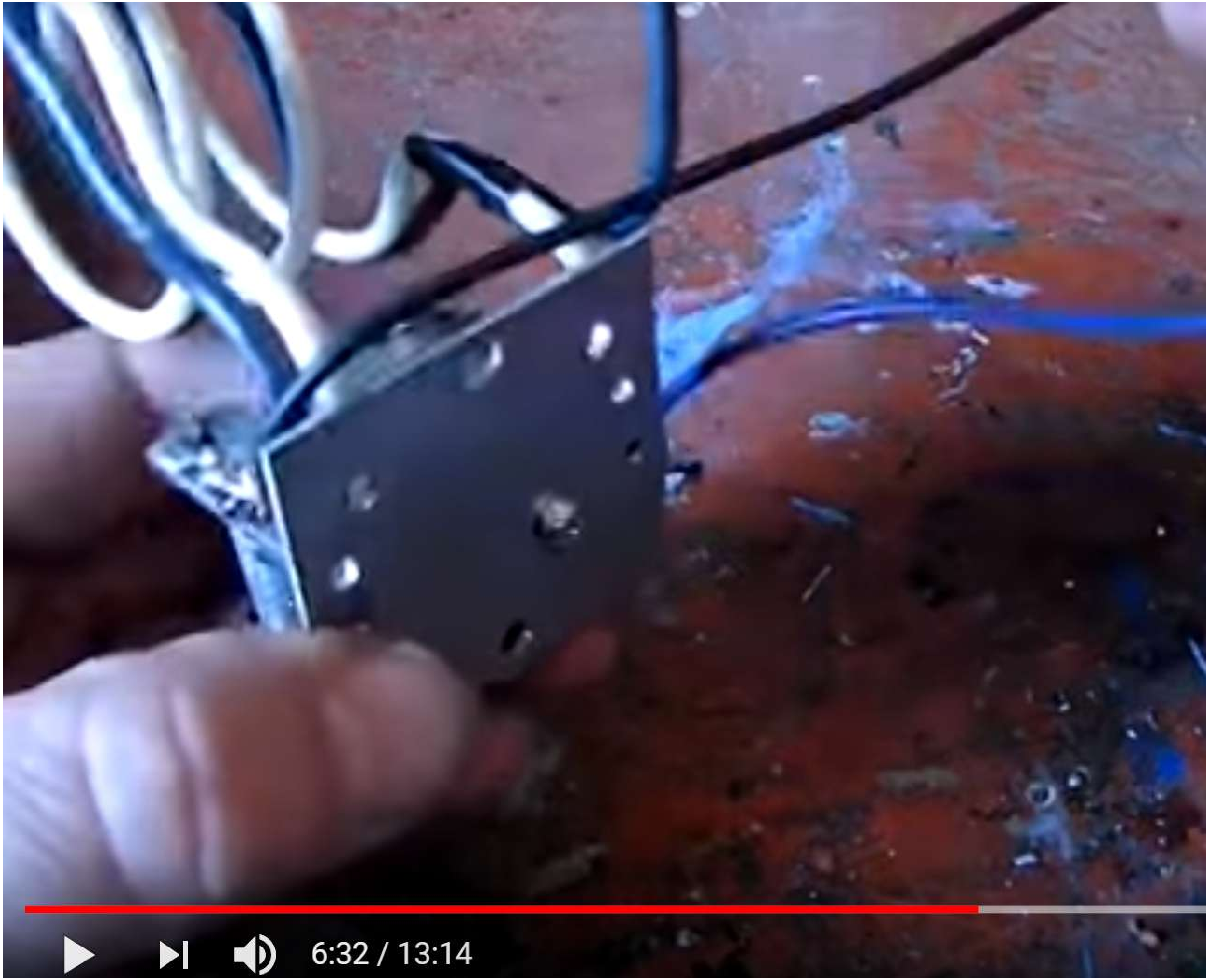

4:49 / 13:14


IN34A
5
TURNS
3
TURNS
365 PF
+
-
rEdf196 73s
13:12 / 13:14


the strongest for
EXTREME POWER
11:23 / 13:14

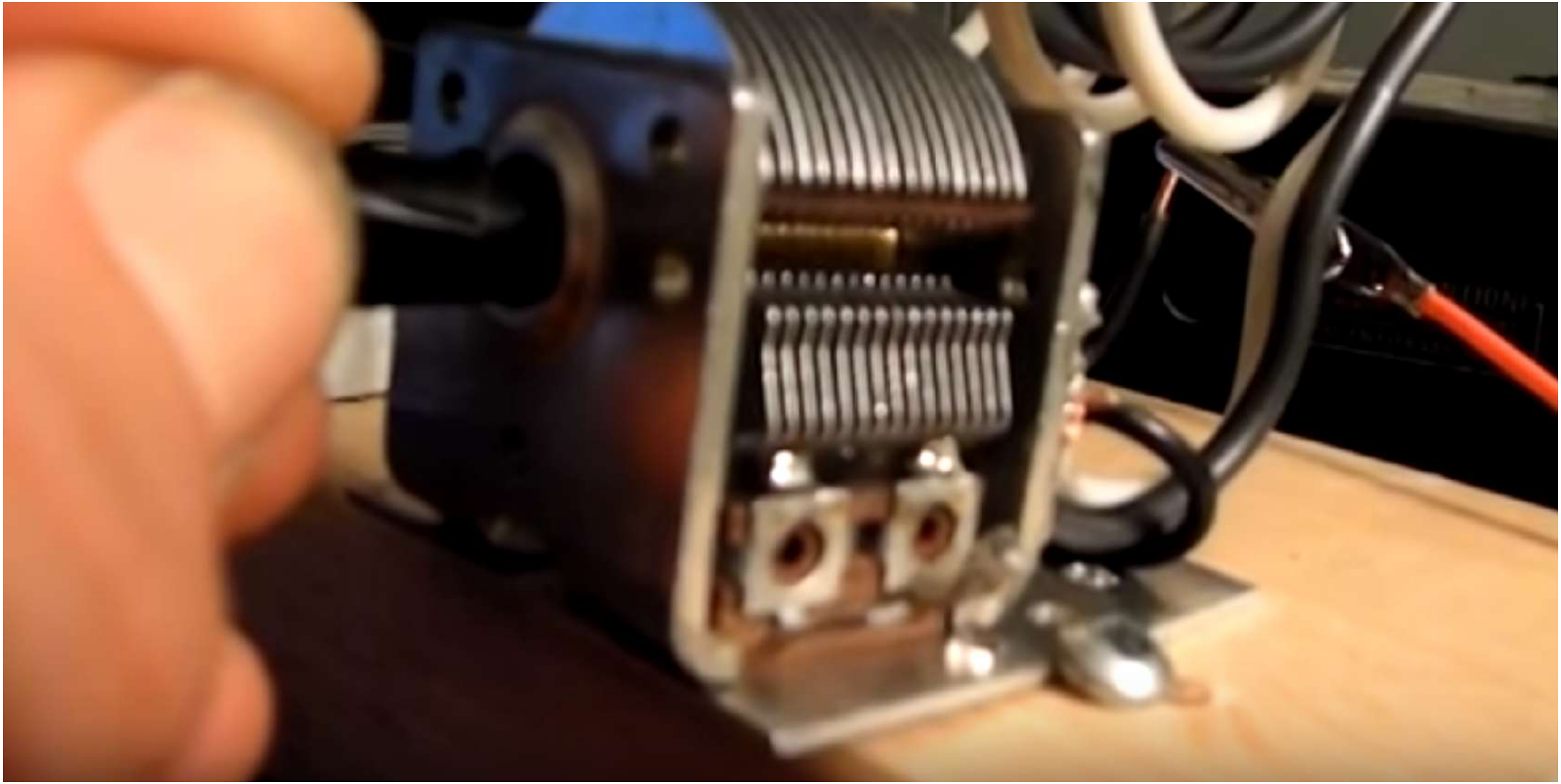

ALTOIDS


8:35 / 13:14
CC


6:32 / 13:14


7:01 / 13:14

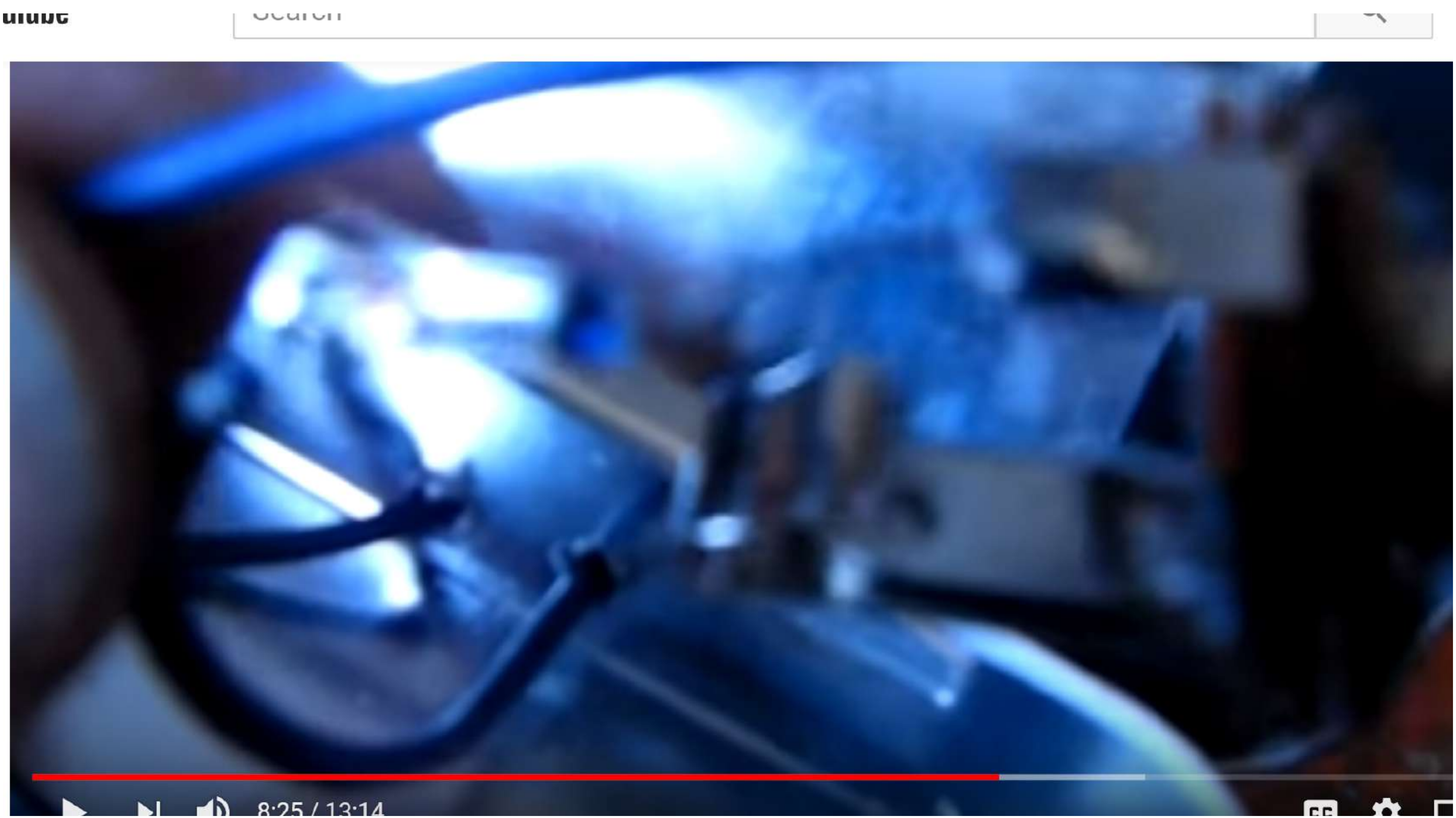

8:56 / 13:14




ALTOIDS
8:21


8:42 / 13:14

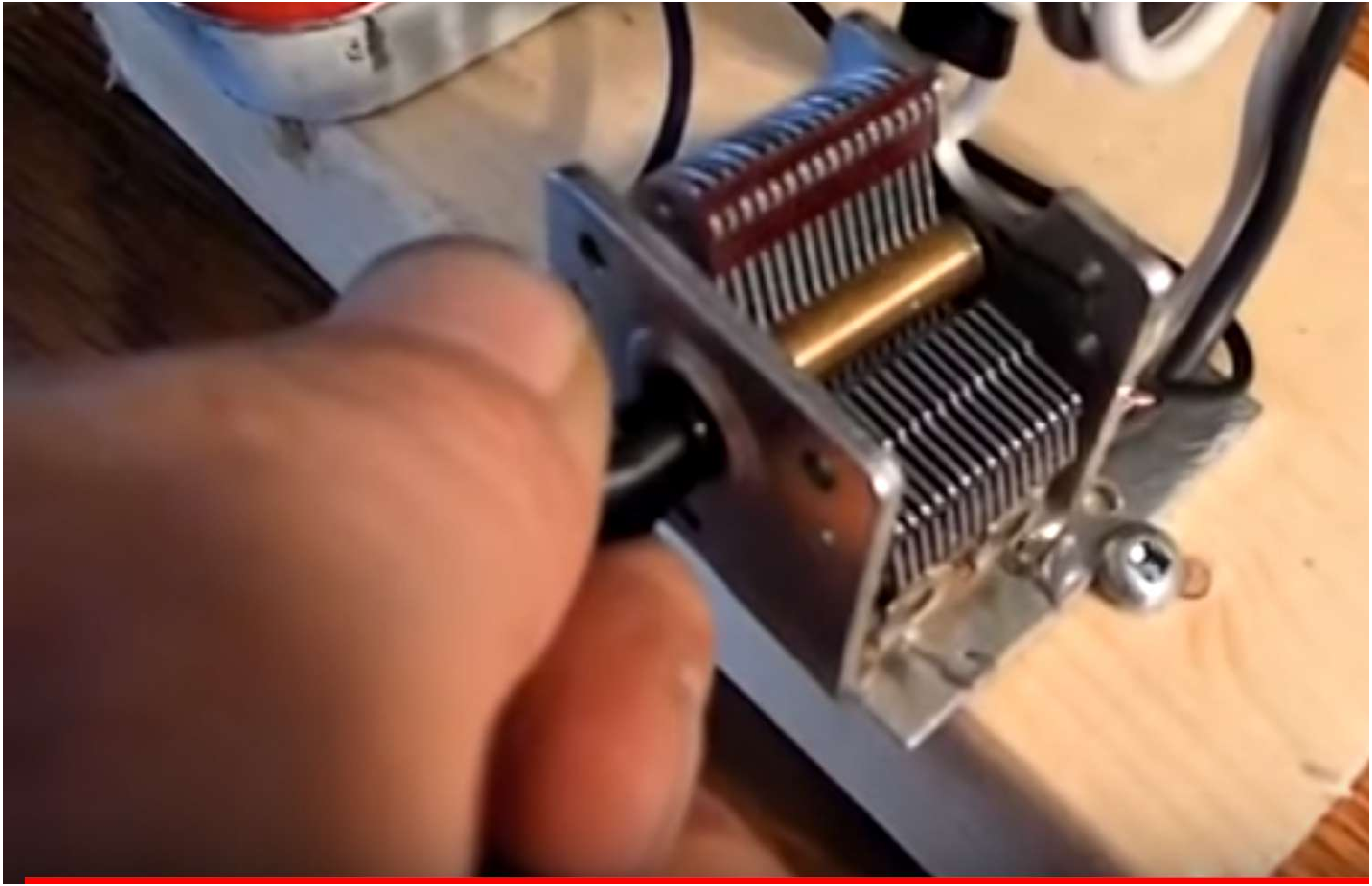

7:39 / 13:14


8:25 / 13:14


Weller
7:24 / 13:14

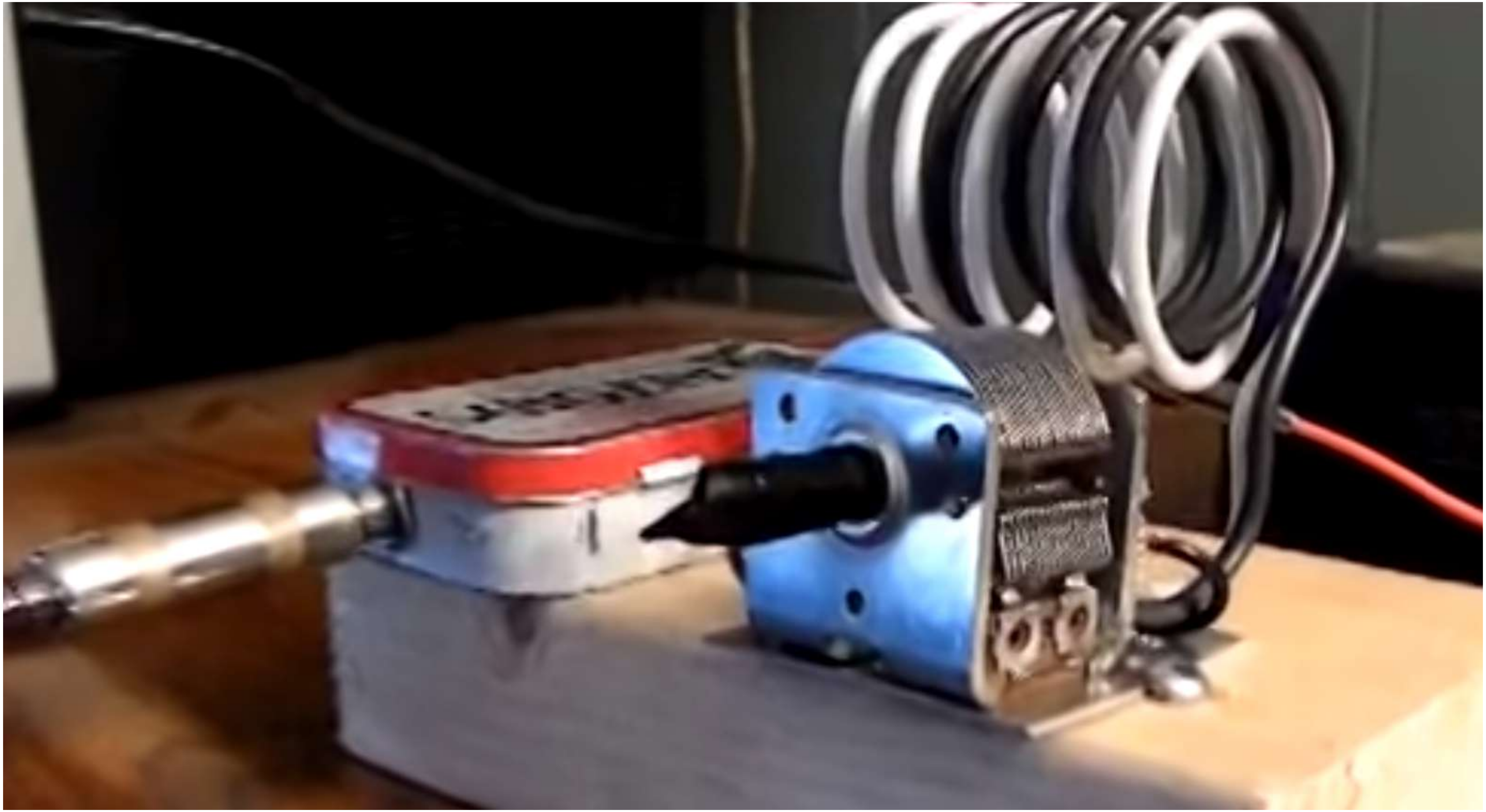

12:24


ALTOIDS
10:35 / 13:14



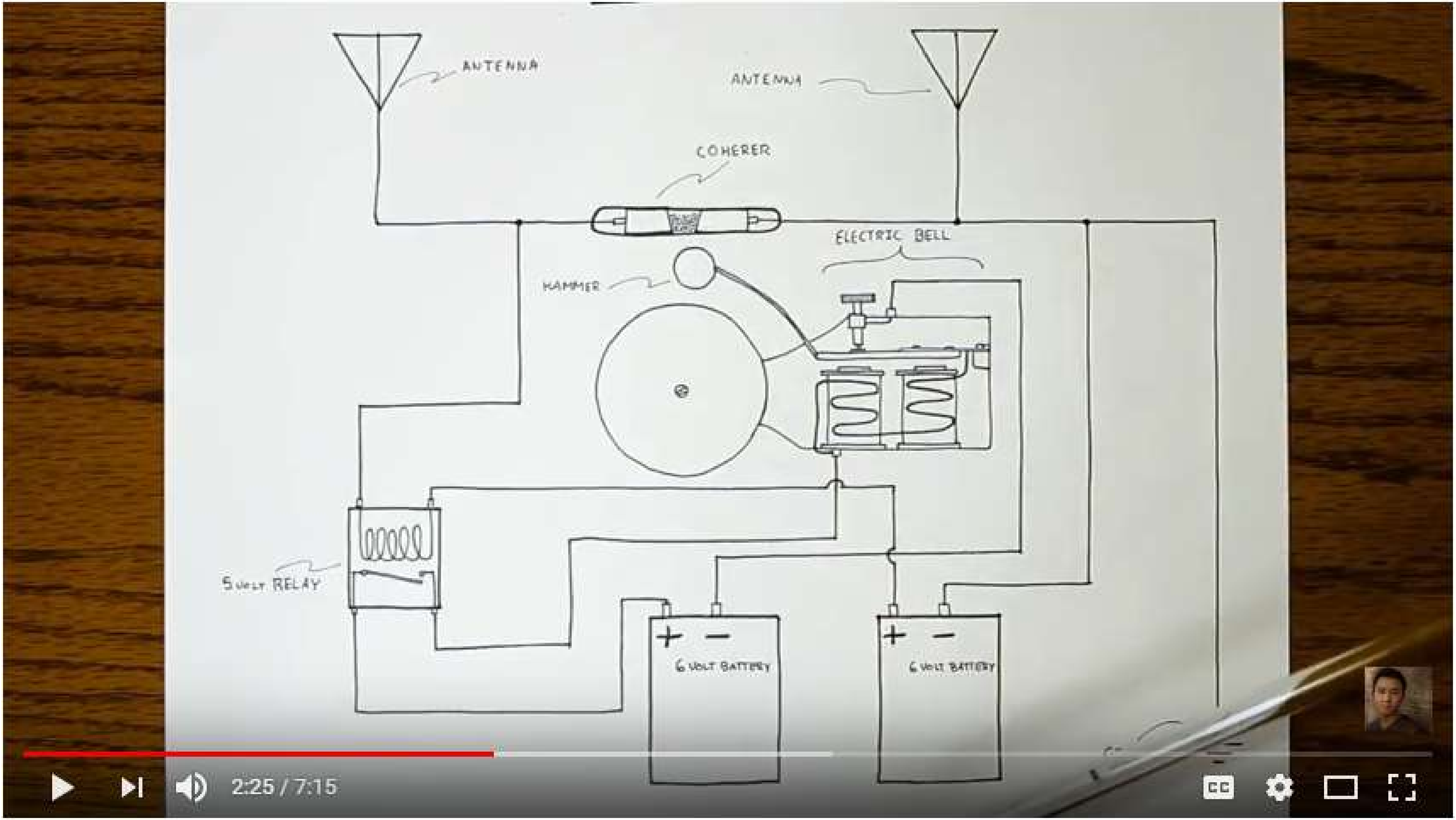

ALTOIDS
CURIOUSLY STRONG
PEPPERMINT


ALTOIDS
9:26 / 13:14



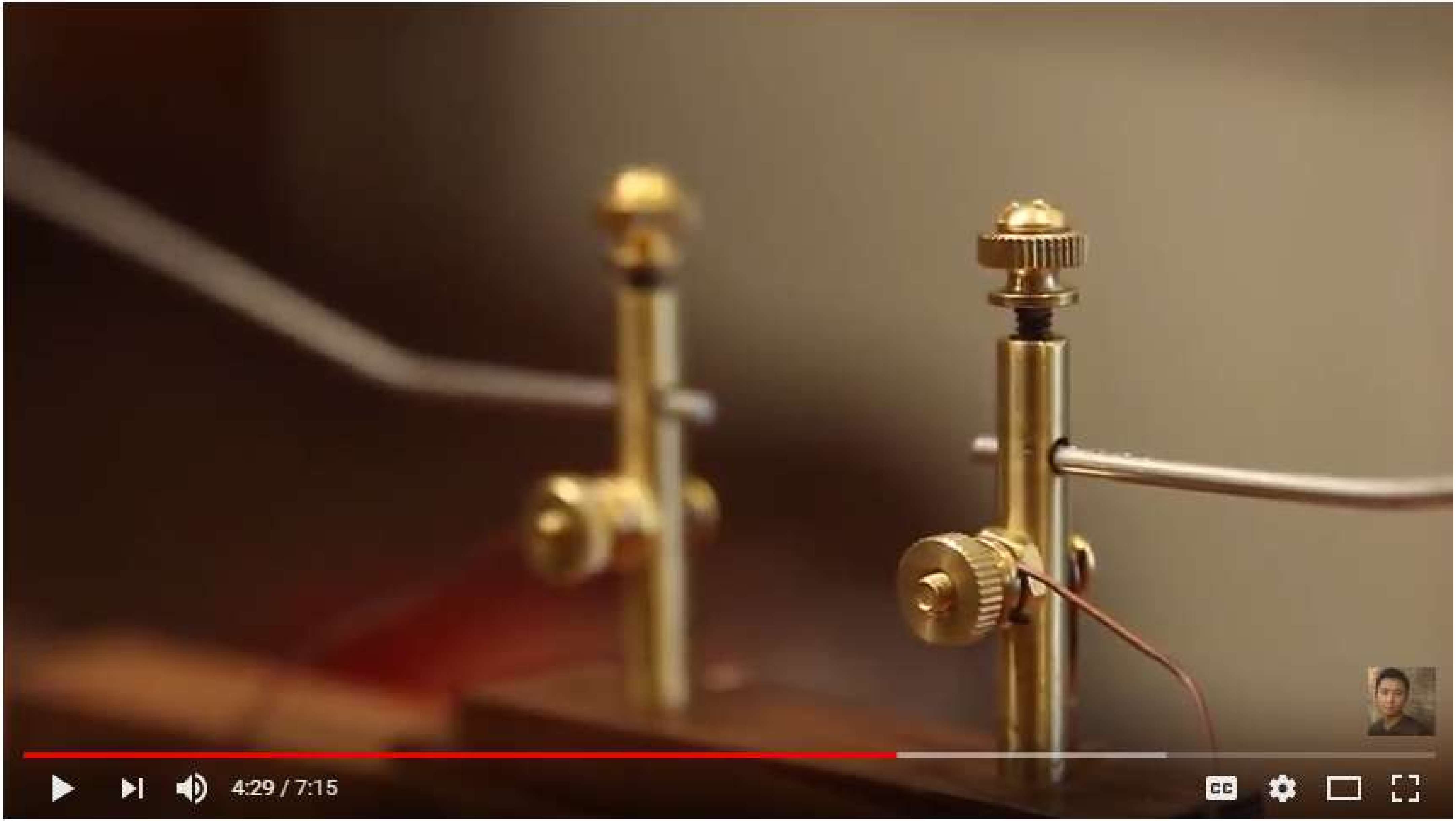
Coherer Detector - Wireless Telegraph


3:32 / 7:15



ANTENNA
ANTENNA
COHERER
ELECTRIC BELL
HAMMER
5 VOLT RELAY
+ −
6 VOLT BATTERY
+ −
6 VOLT BATTERY
2:25 / 7:15


6:40 / 7:15
CC
HD


4:29 / 7:15


6:12 / 7:15

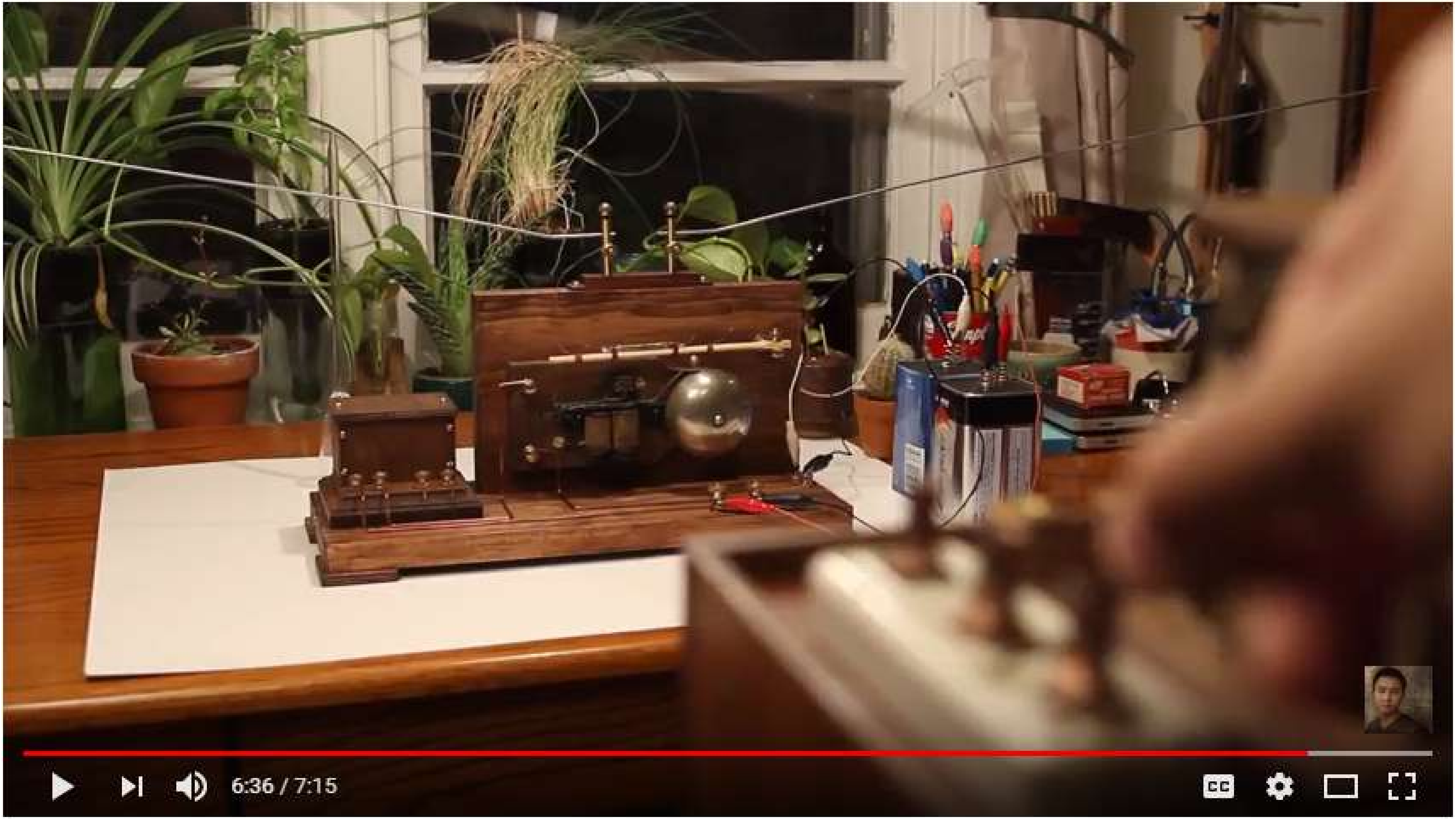

6:18 / 7:15
CC

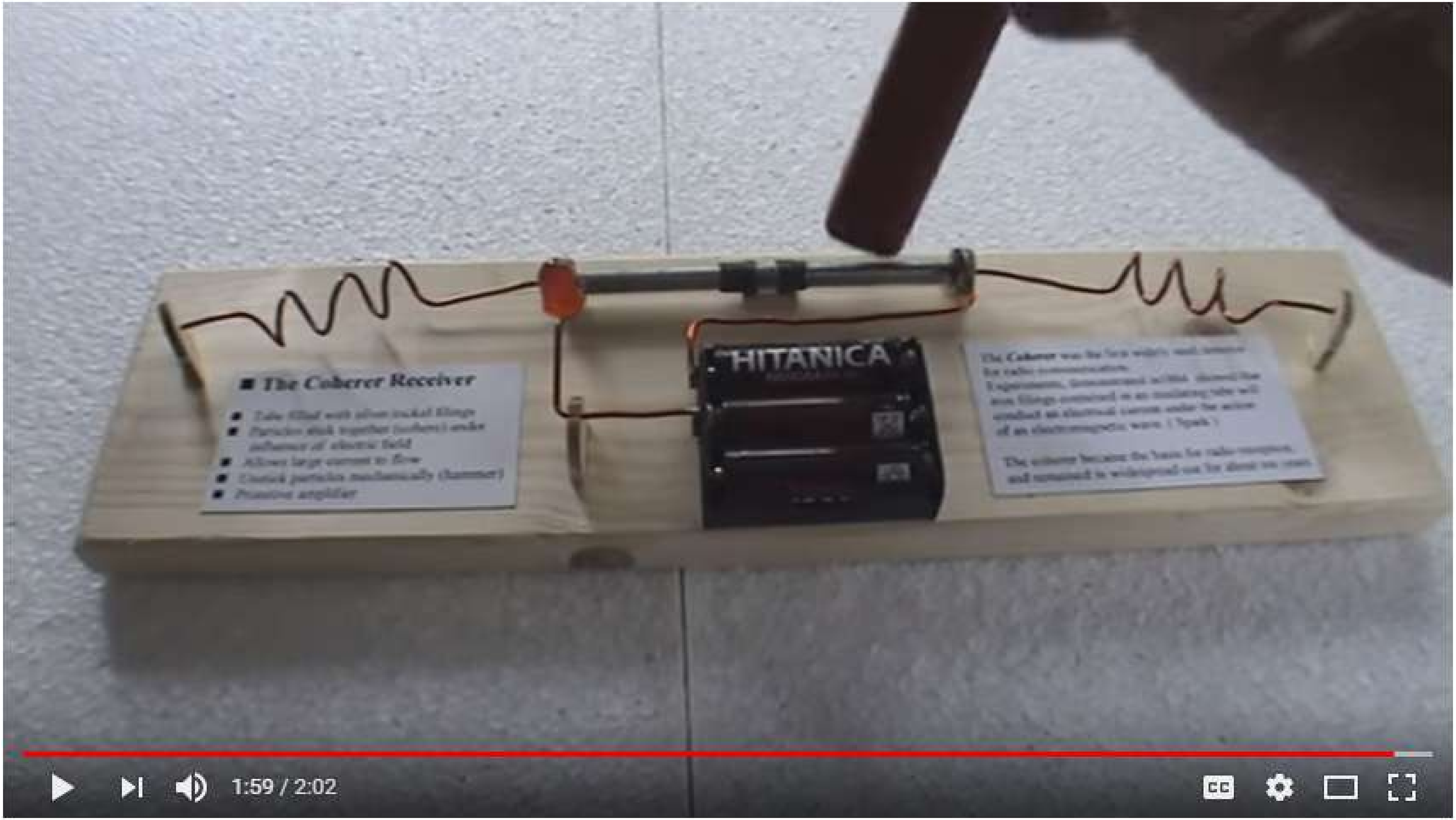

4:20 / 7:15

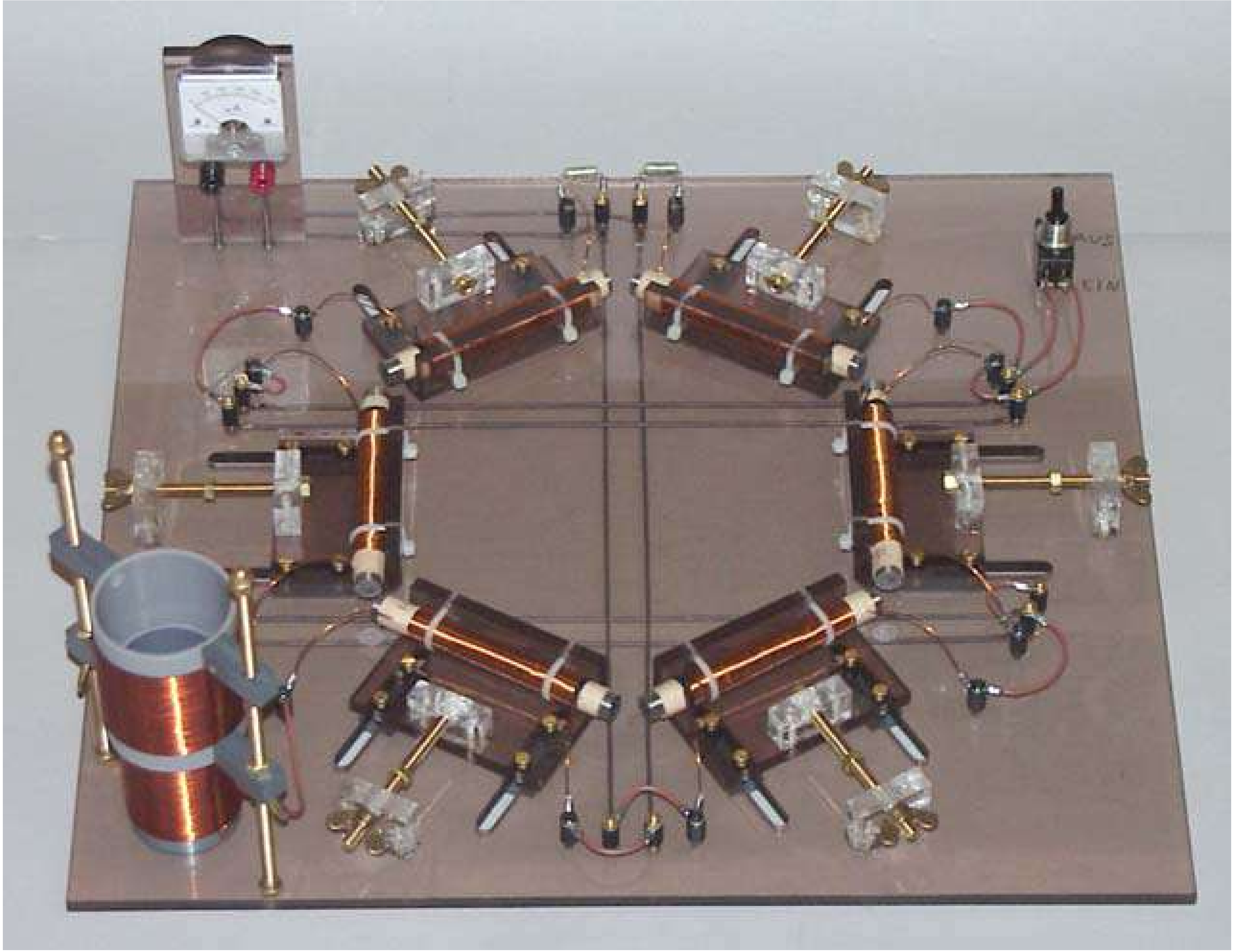

6:05 / 7:15

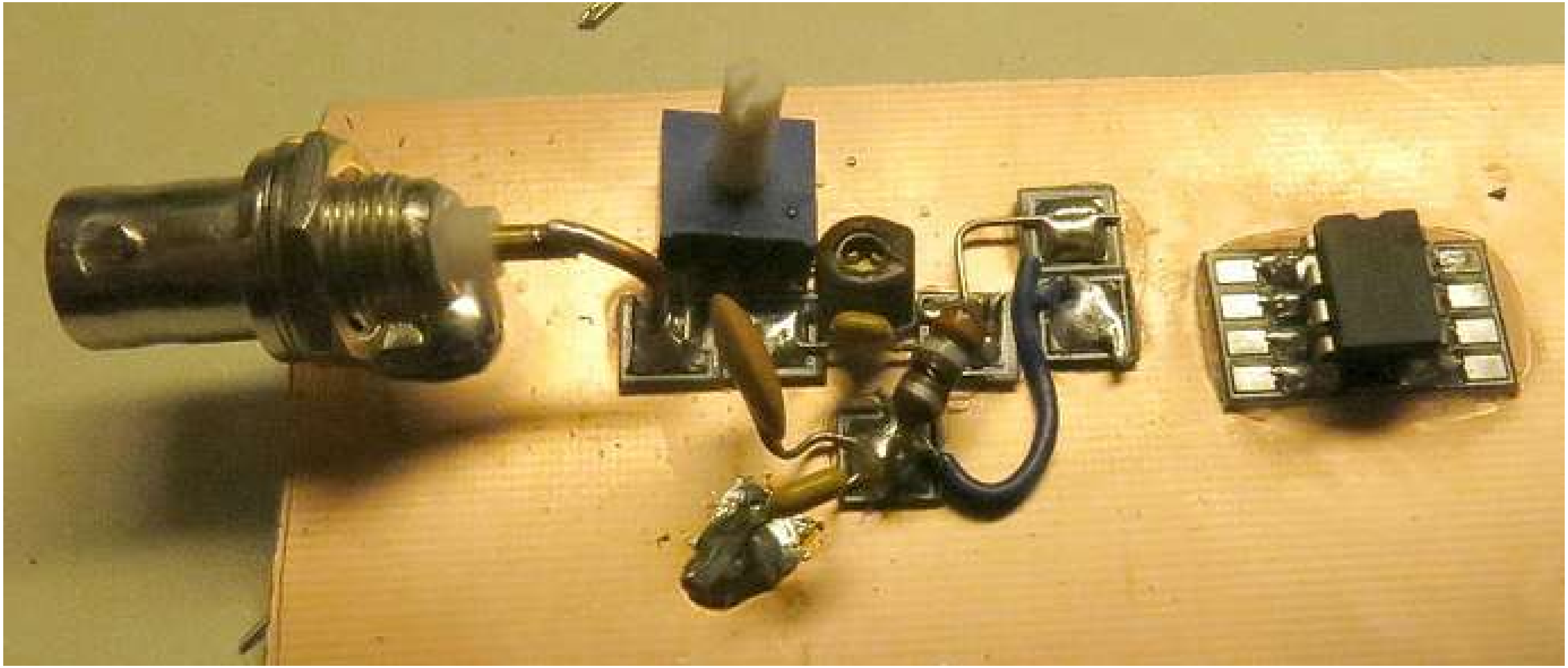

6:06 / 7:15
CC

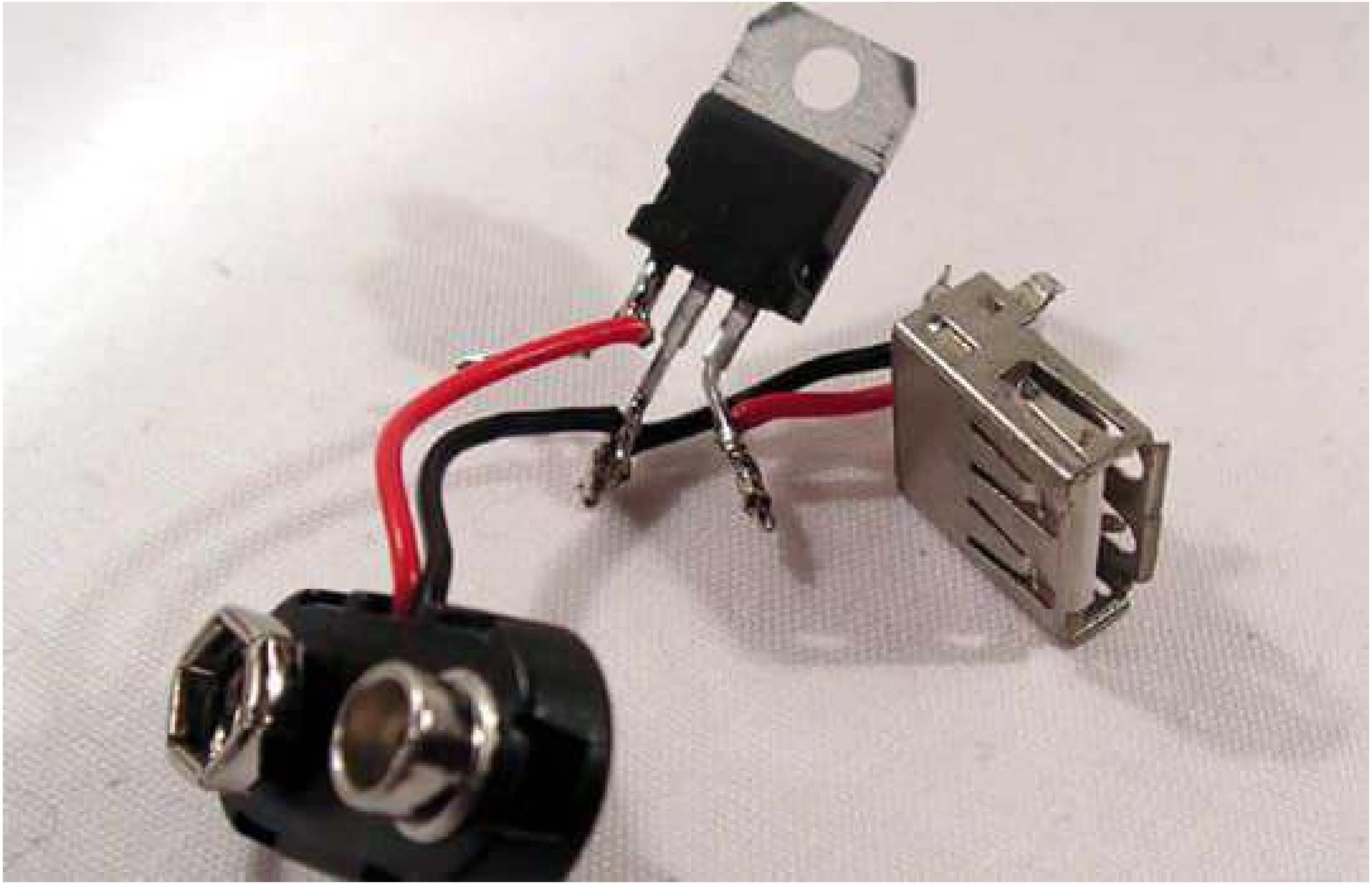

6:26 / 7:15
CC

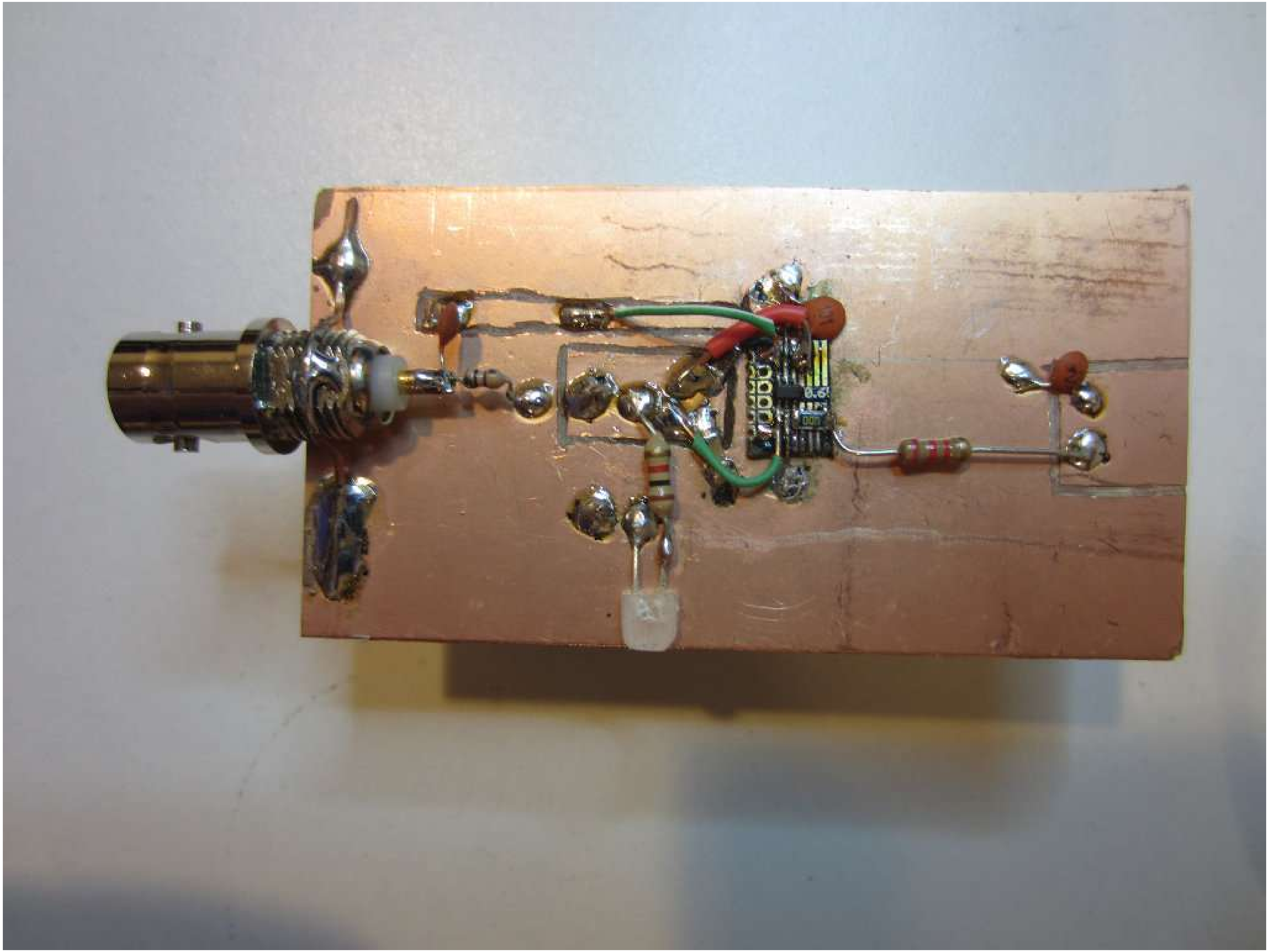

6:36 / 7:15

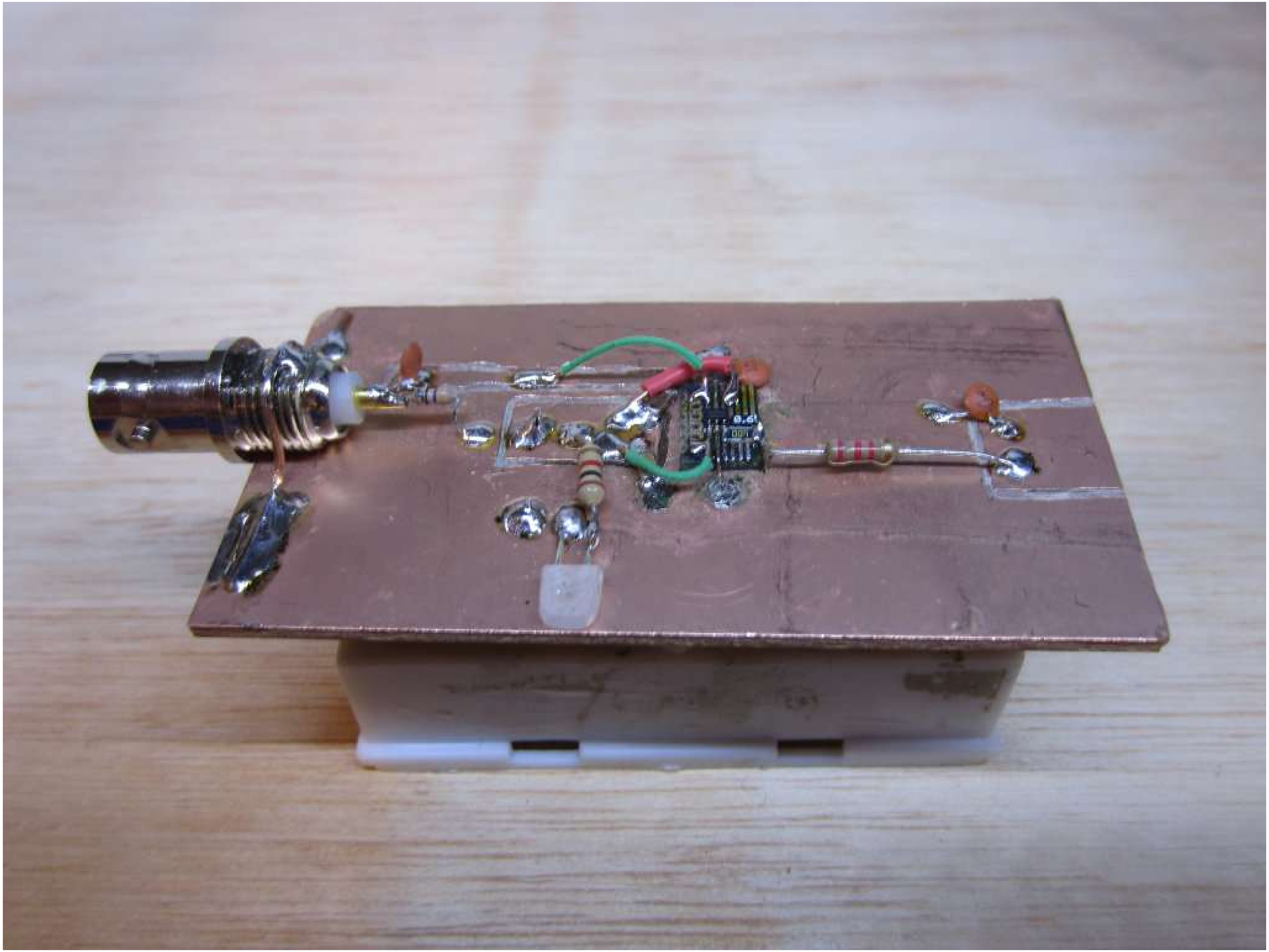

The Coherer Receiver
HITANICA
1:59 / 2:02

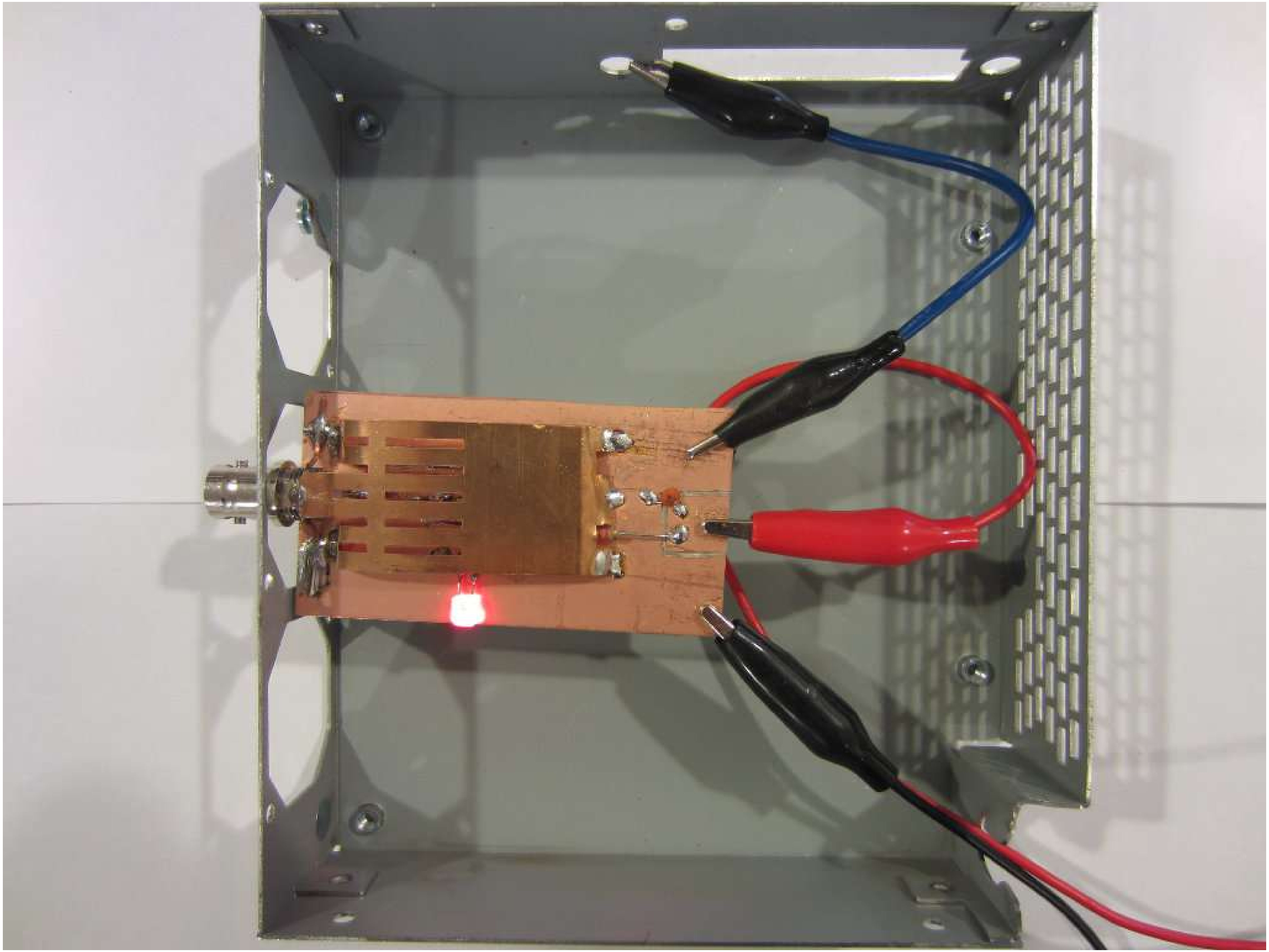










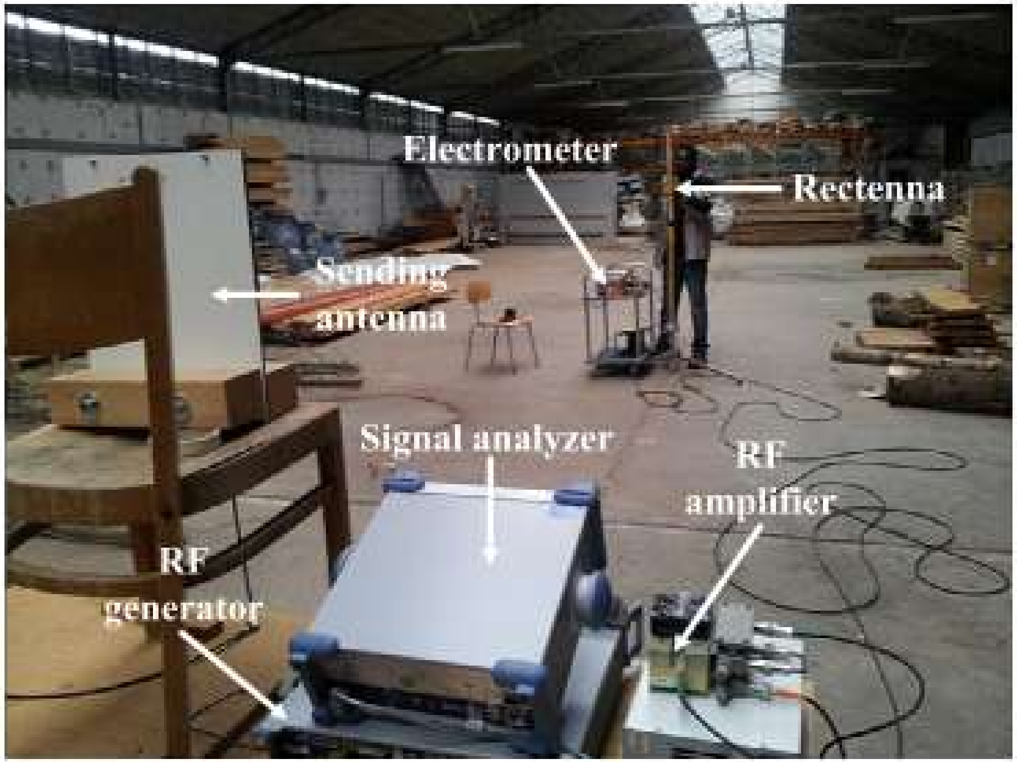


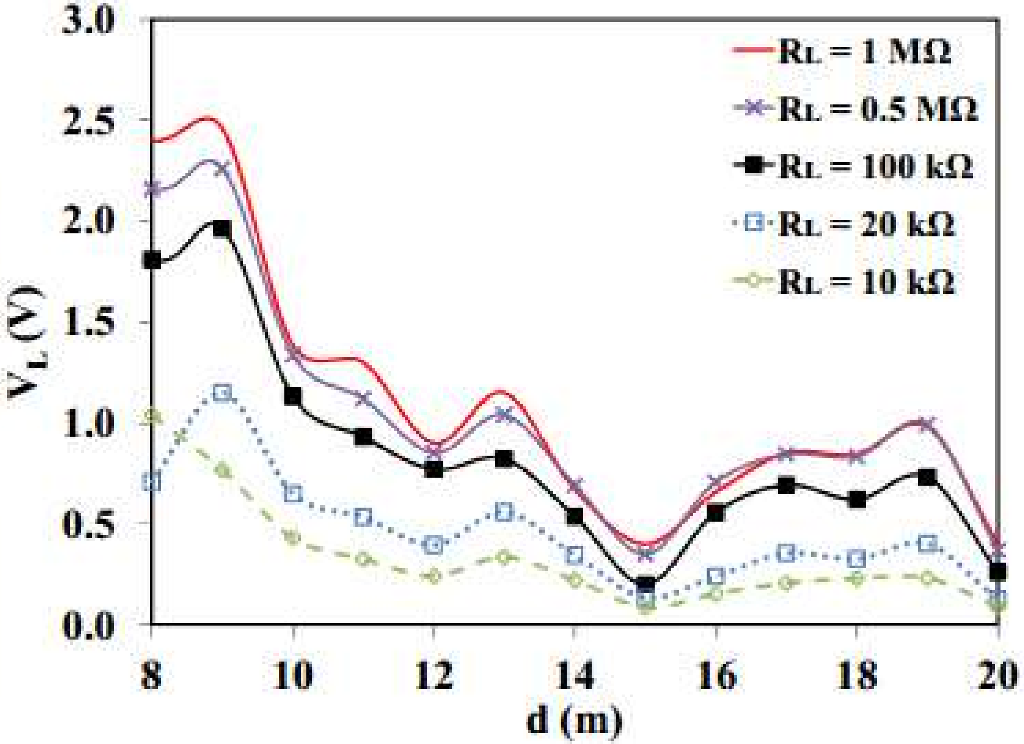
GW3UEP QRP Meter LF-HF 10W max

12 June 2012

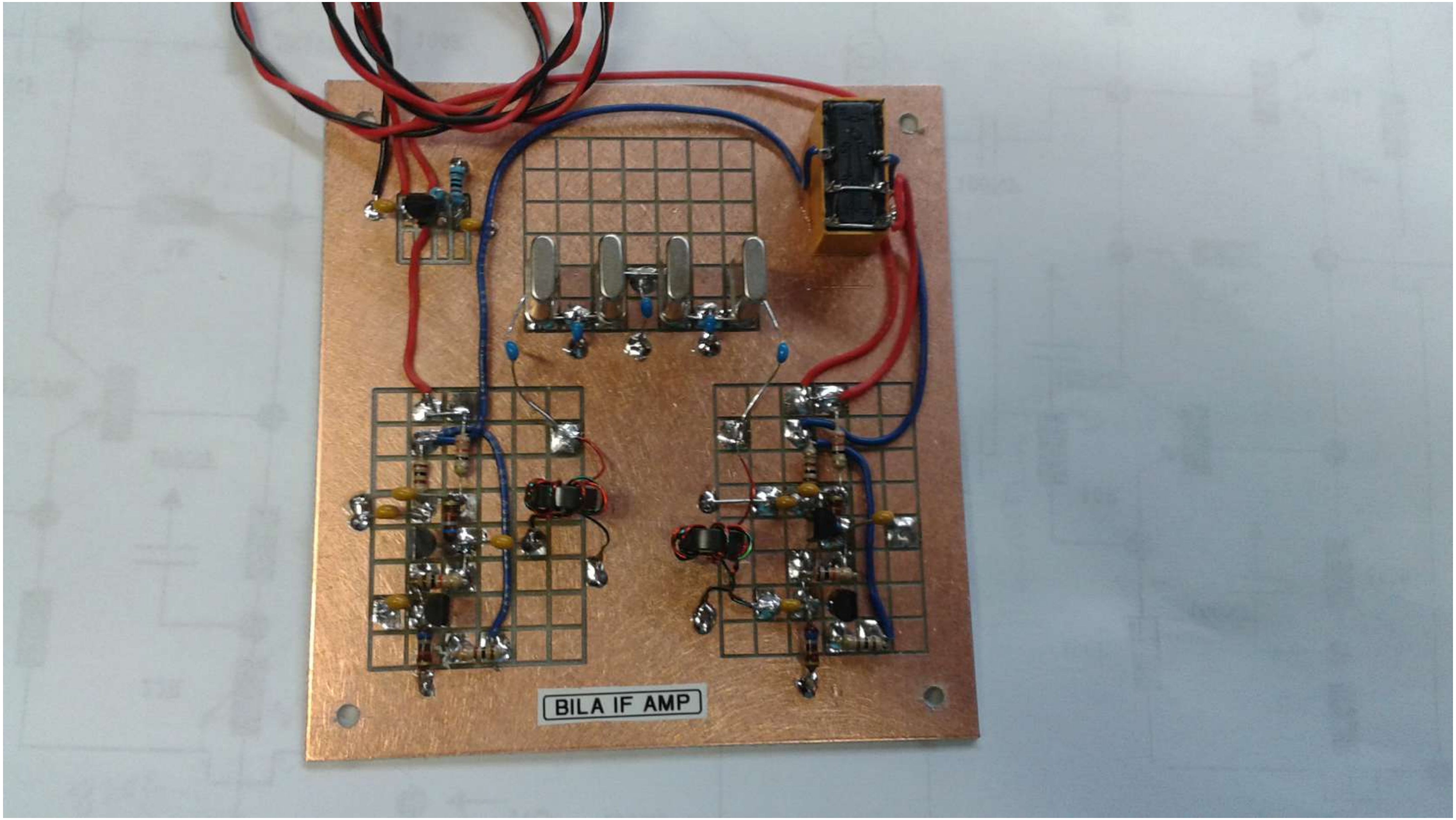

25
470
105K
250
220
25V

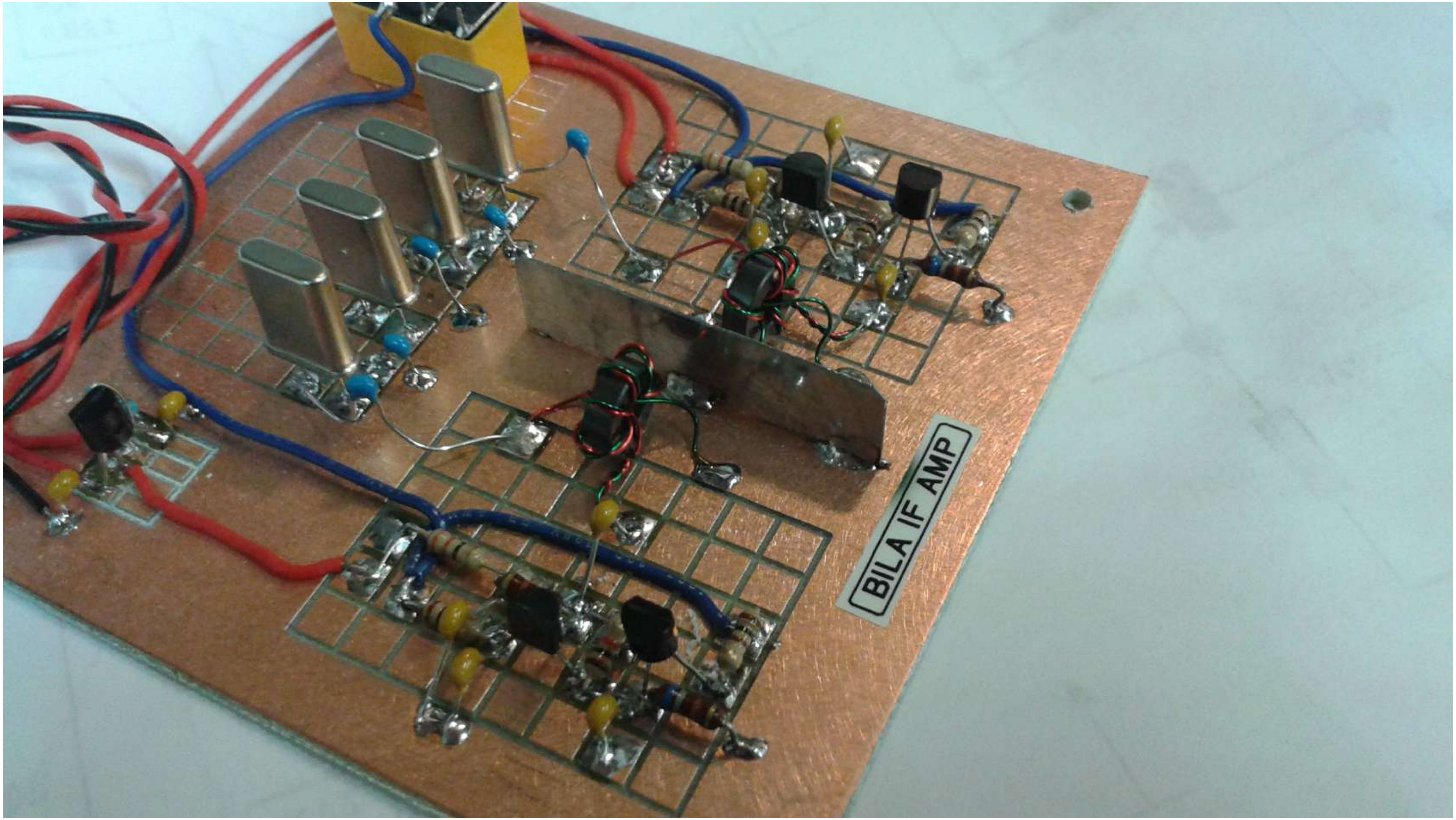

RF
IN
REGEN
TUNE
AF

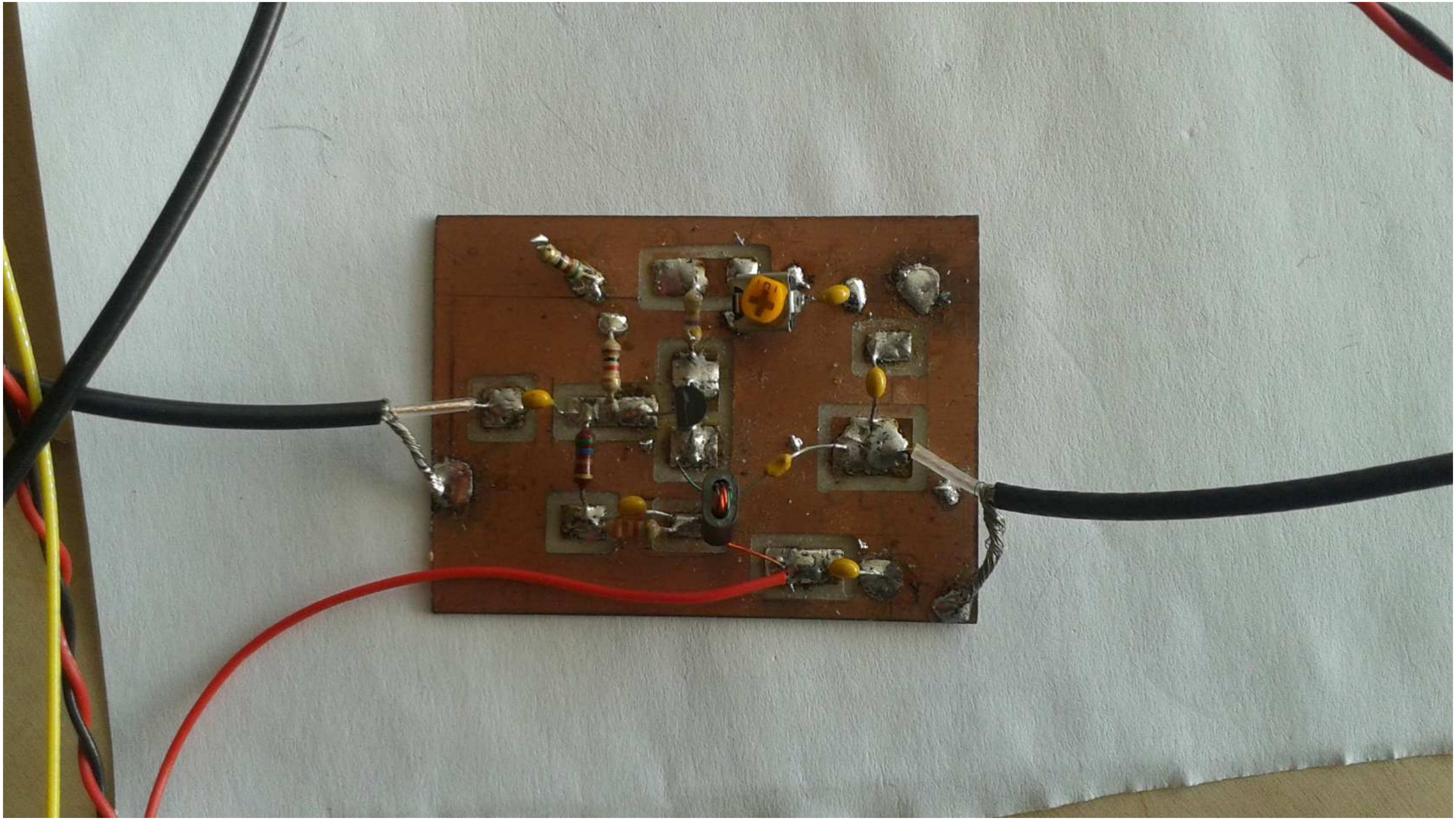

Electrometer
Rectenna
Sending antenna
Signal analyzer
RF amplifier
RF generator

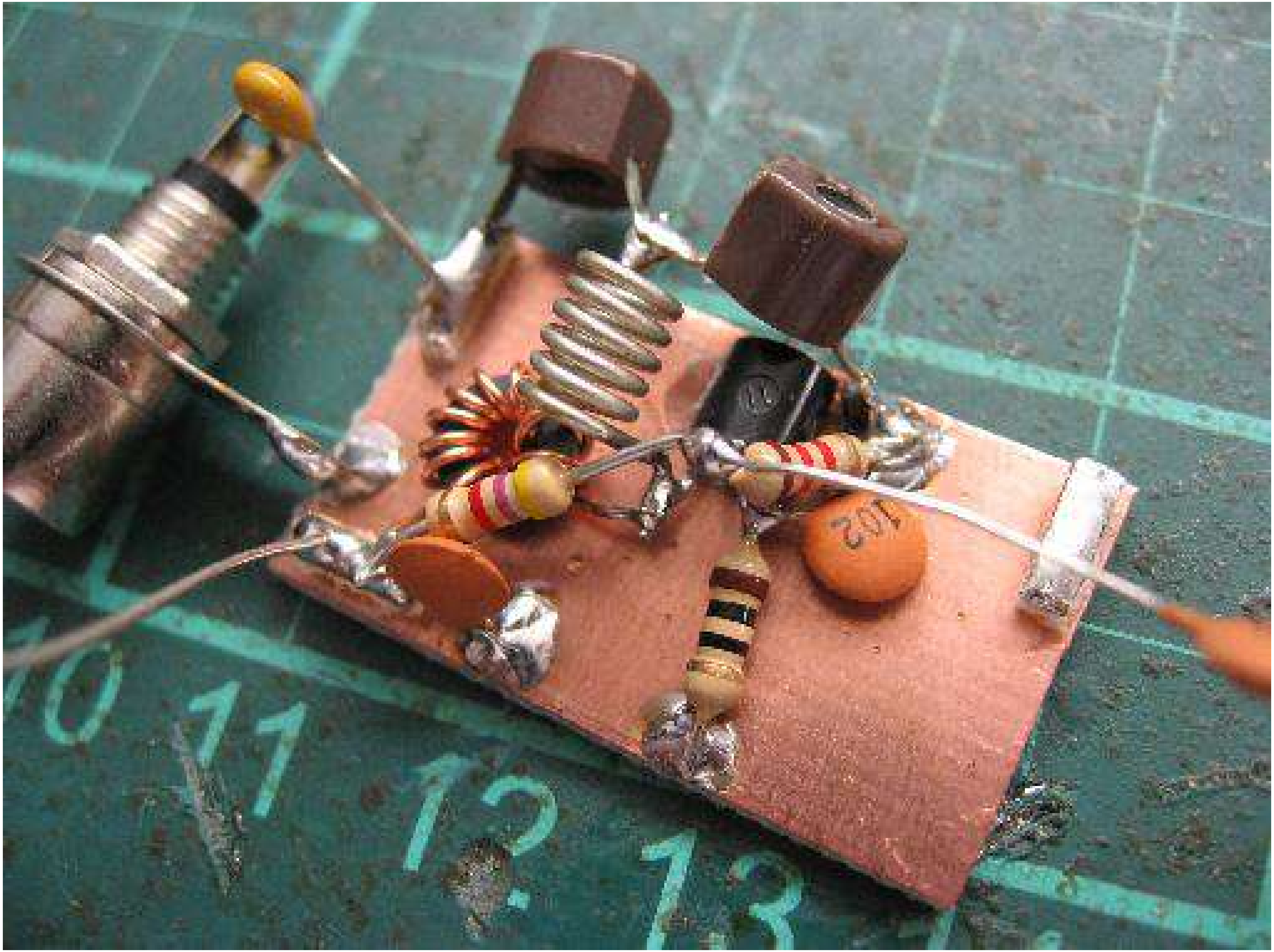

RL = 1 MΩ
RL = 0.5 MΩ
RL = 100 kΩ
RL = 20 kΩ
RL = 10 kΩ
V_L (V)
d (m)

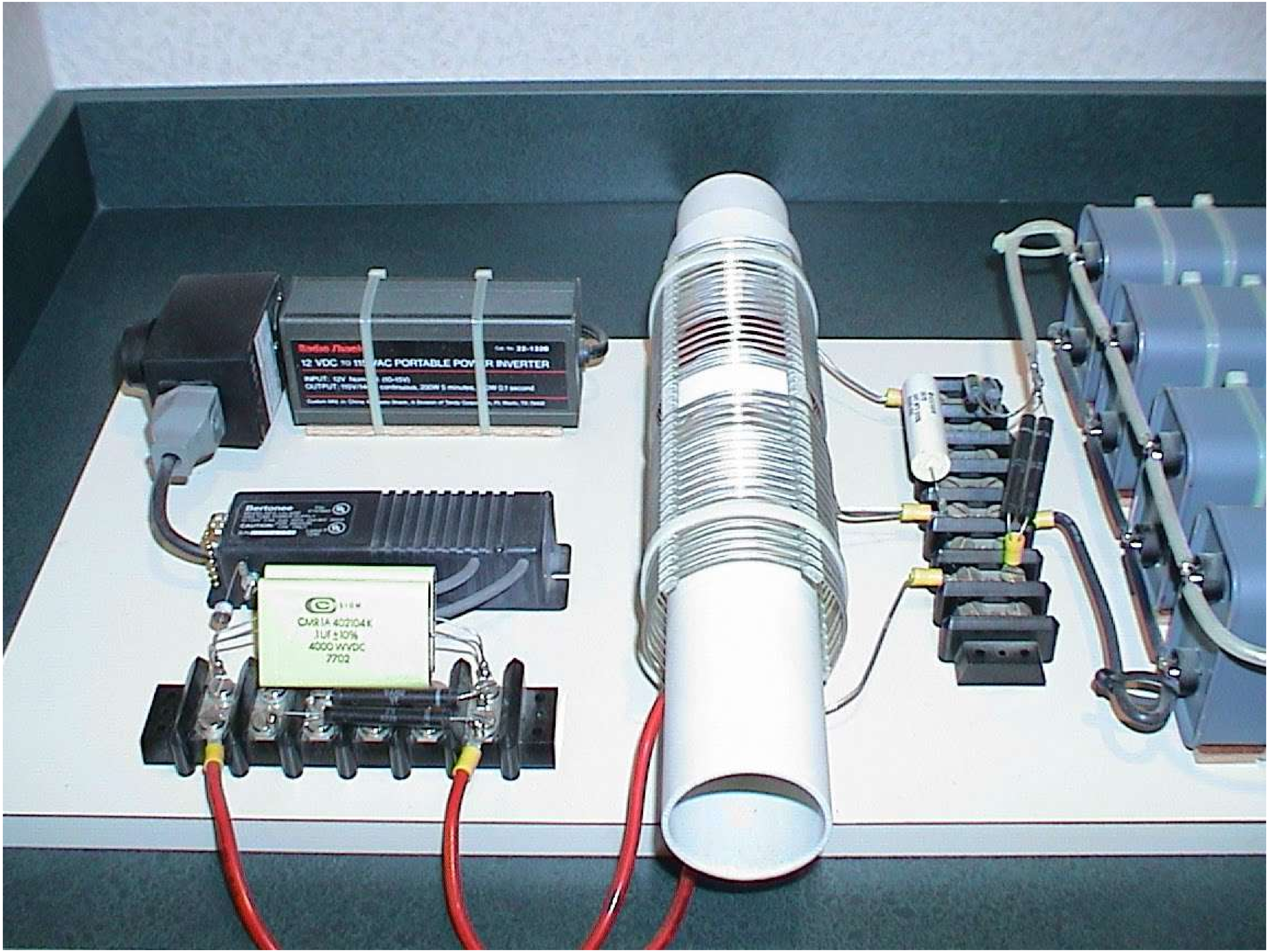

DENGYO
ch7 20MHz幅
Wi-Fi波収穫用
レクテナ


BILA IF AMP

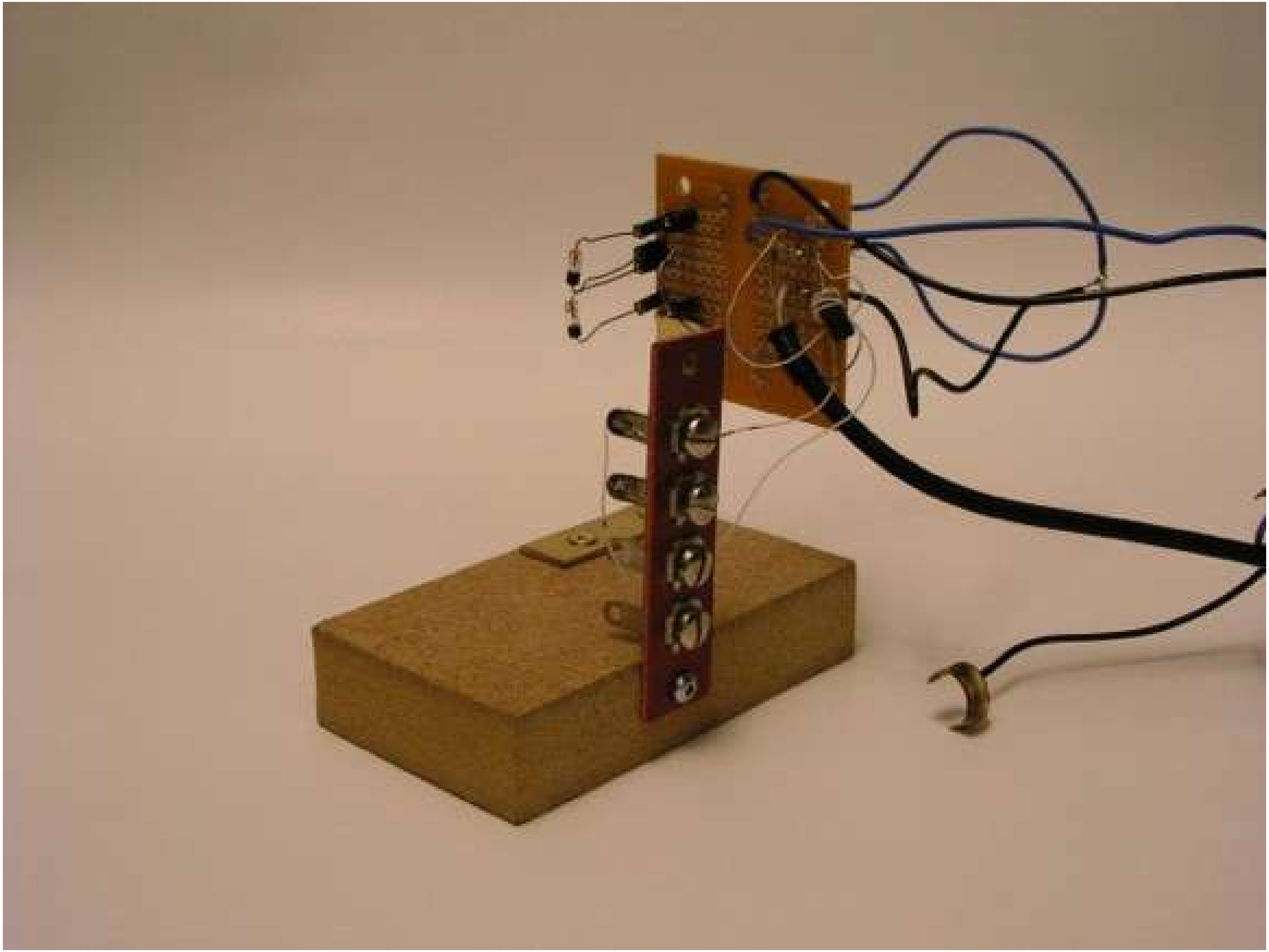

BILA IF AMP

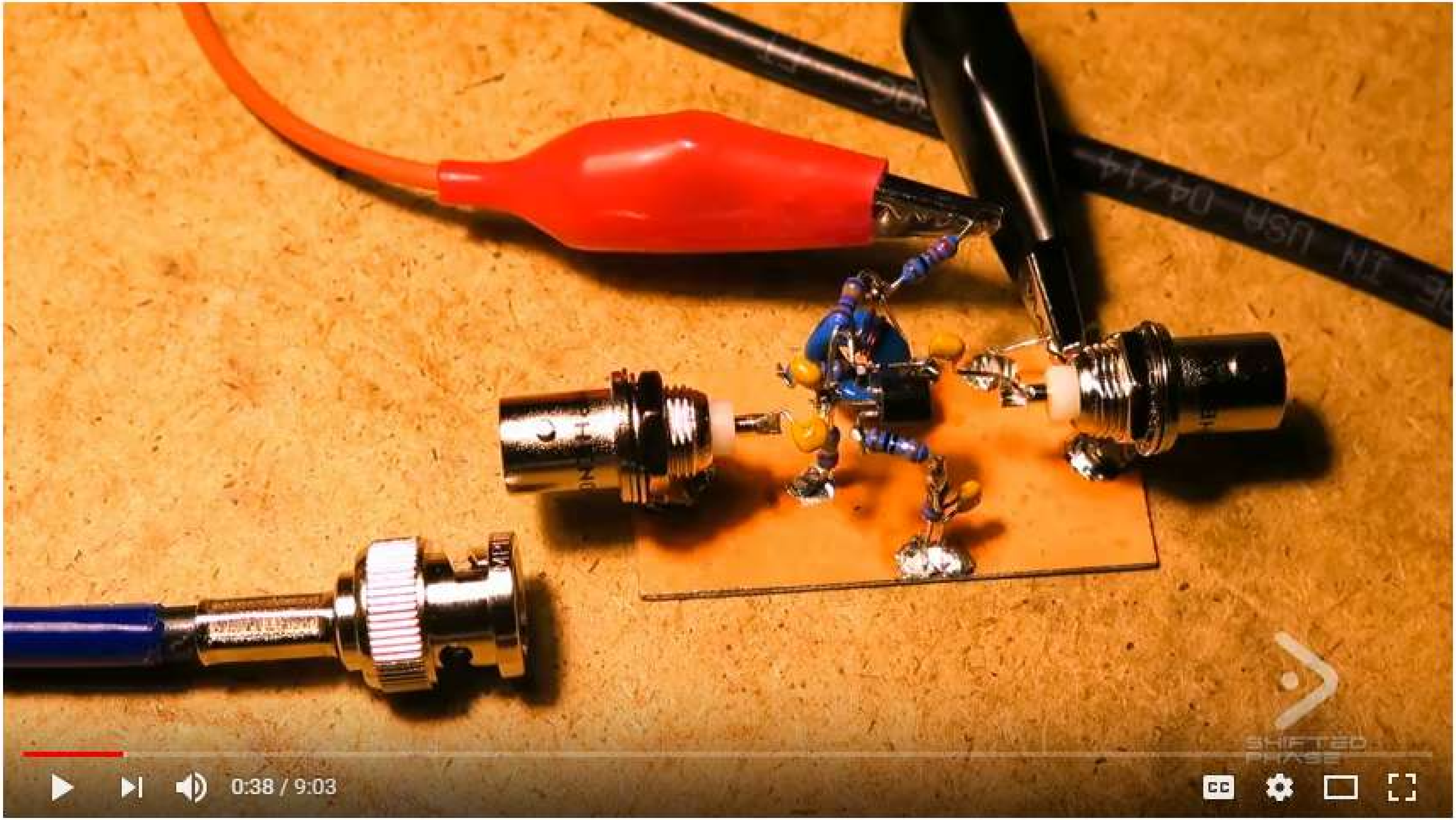



102
11
12
13

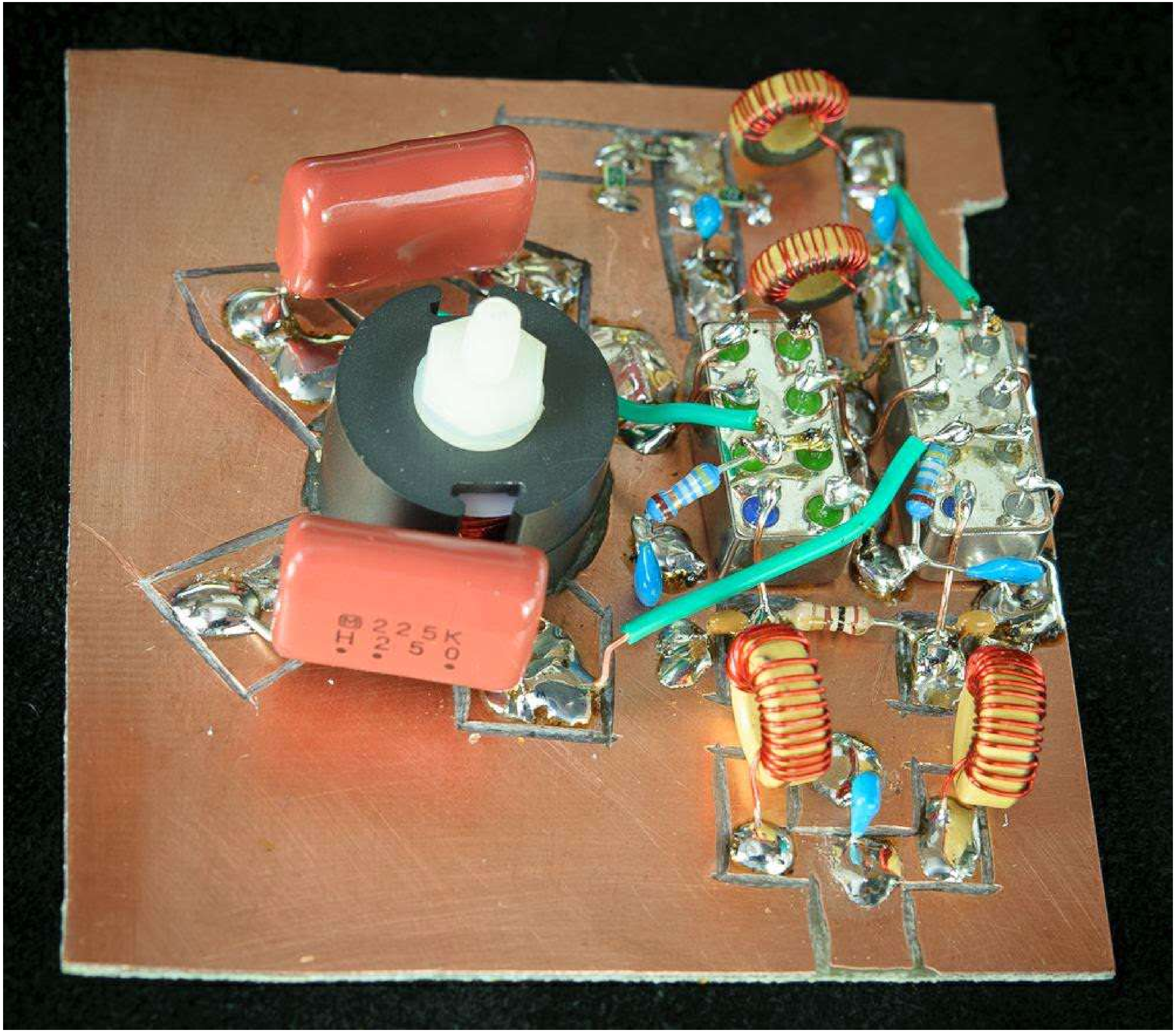


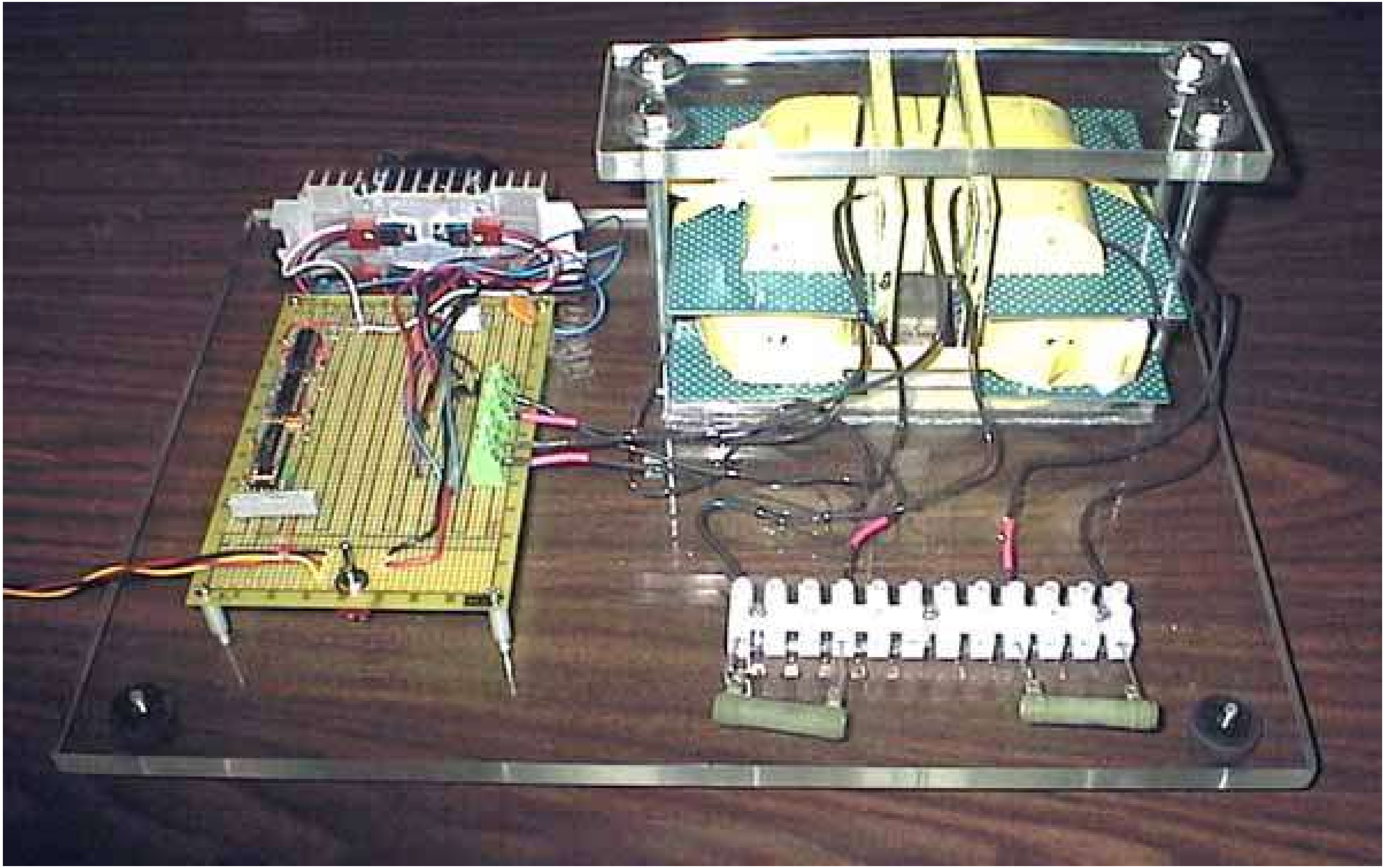
12 VDC
PORTABLE
INVERTER
4000 WVDC
7702



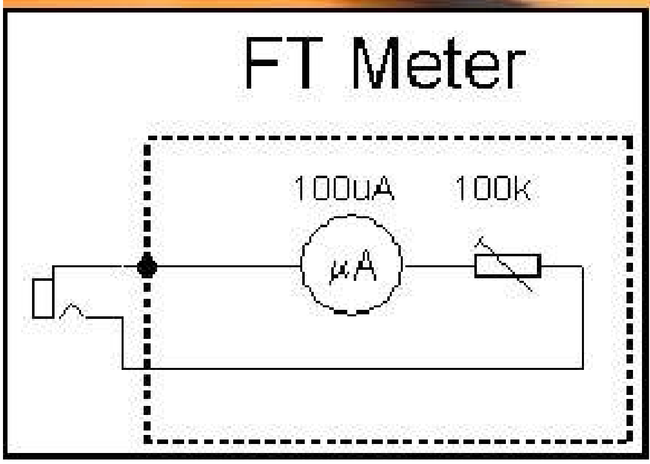


Electronics Tech - RF Amp


225K
H250

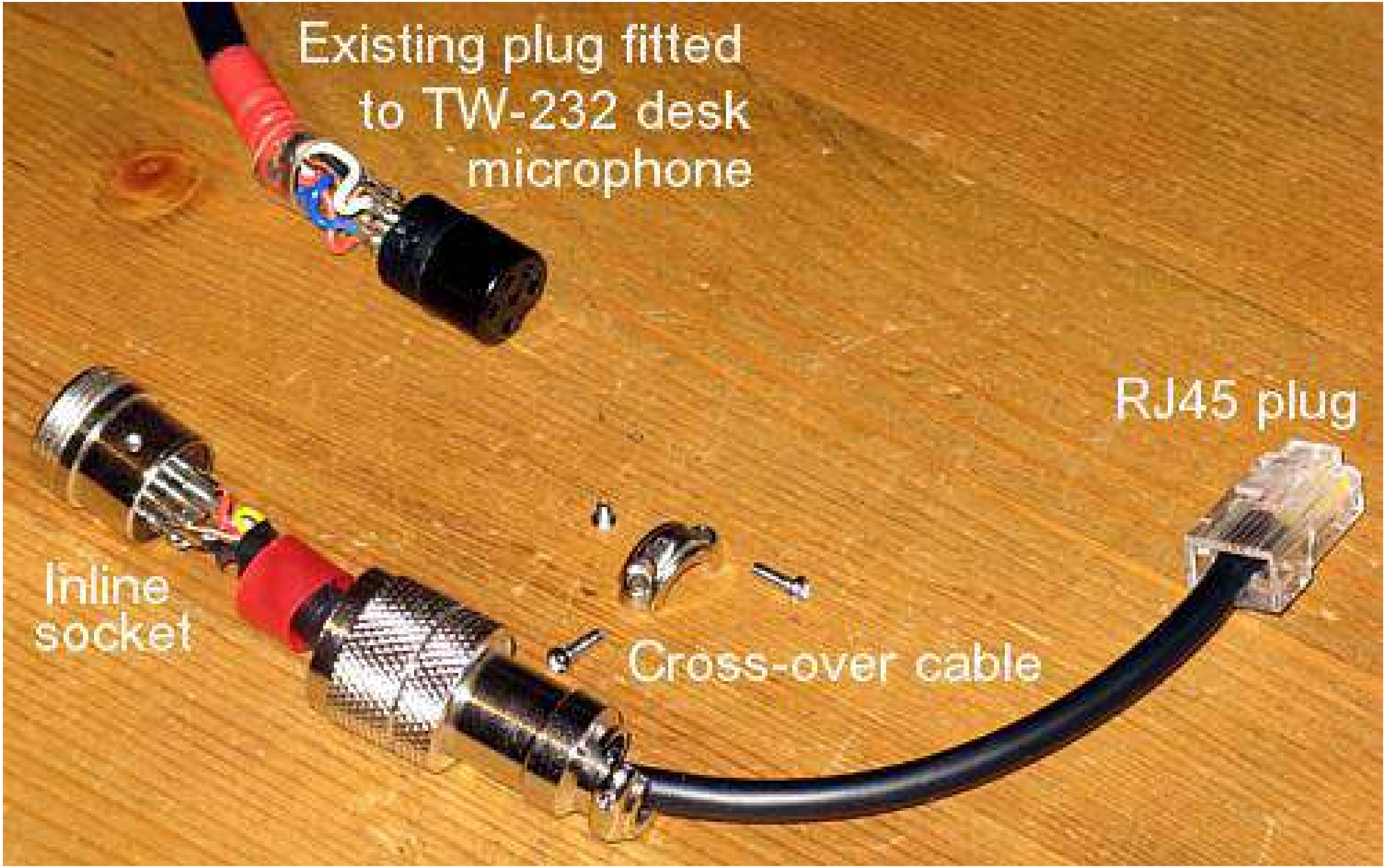


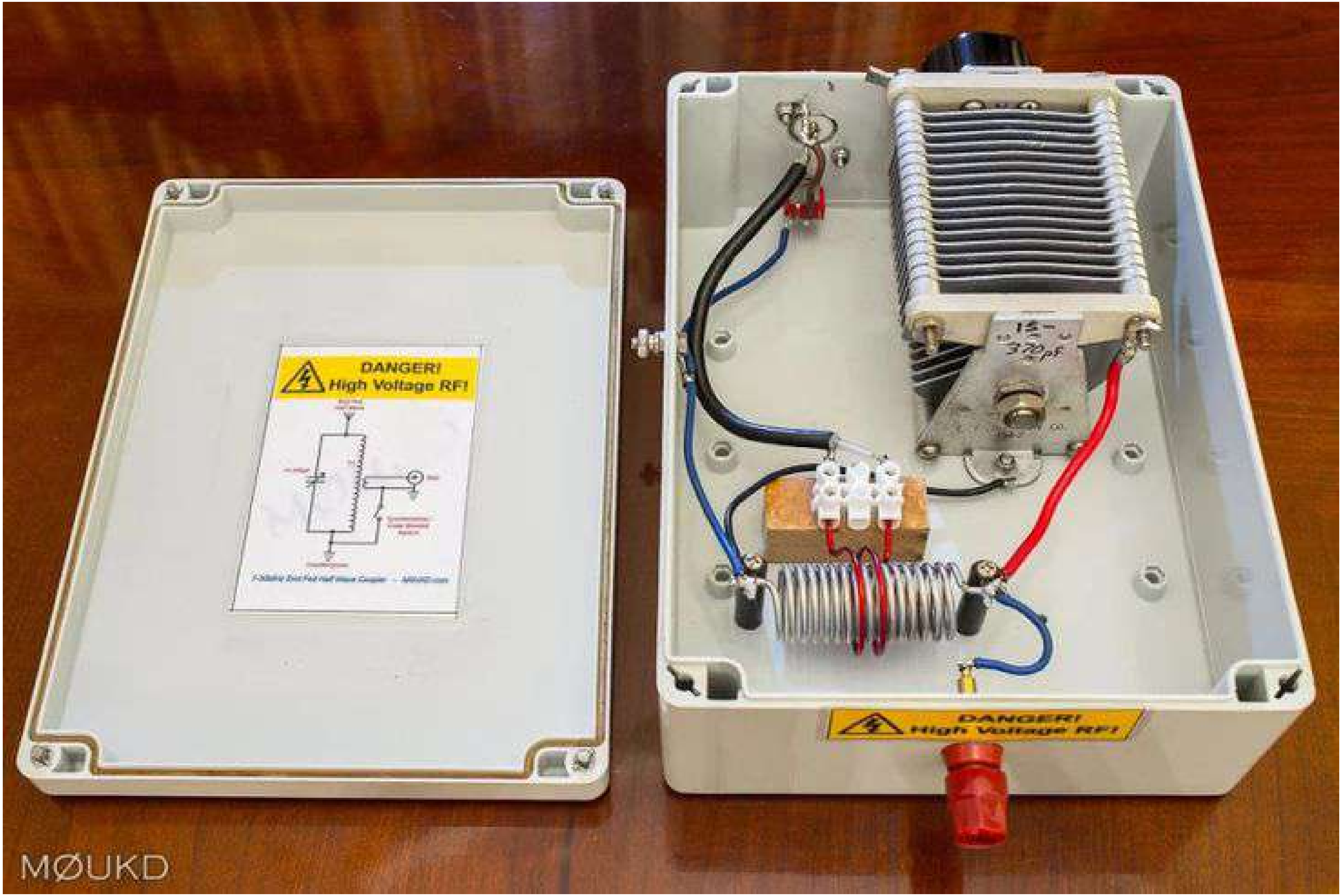

MØMTJ - www.mds975.co.uk

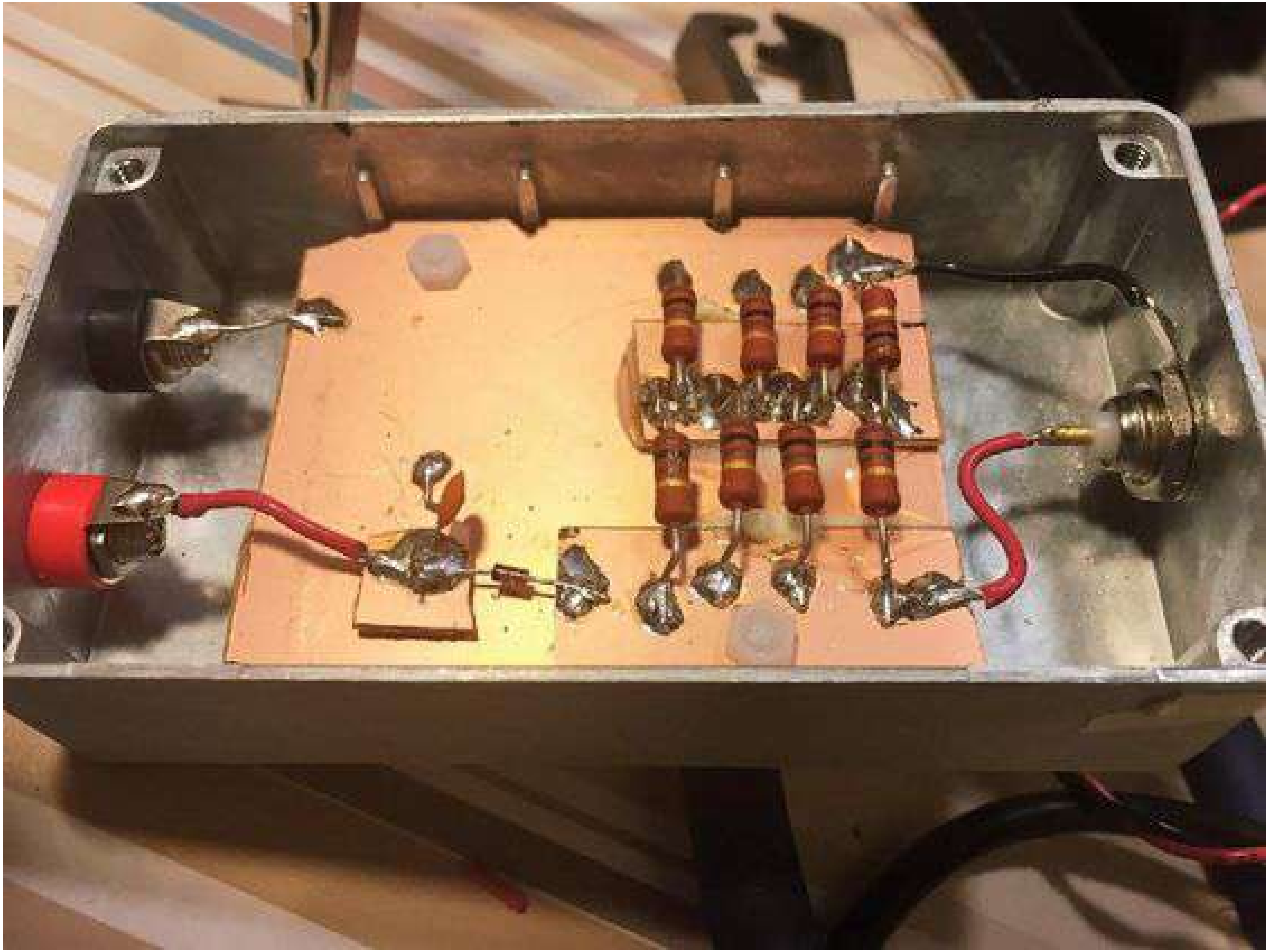

FT Meter
100uA
100k
μA

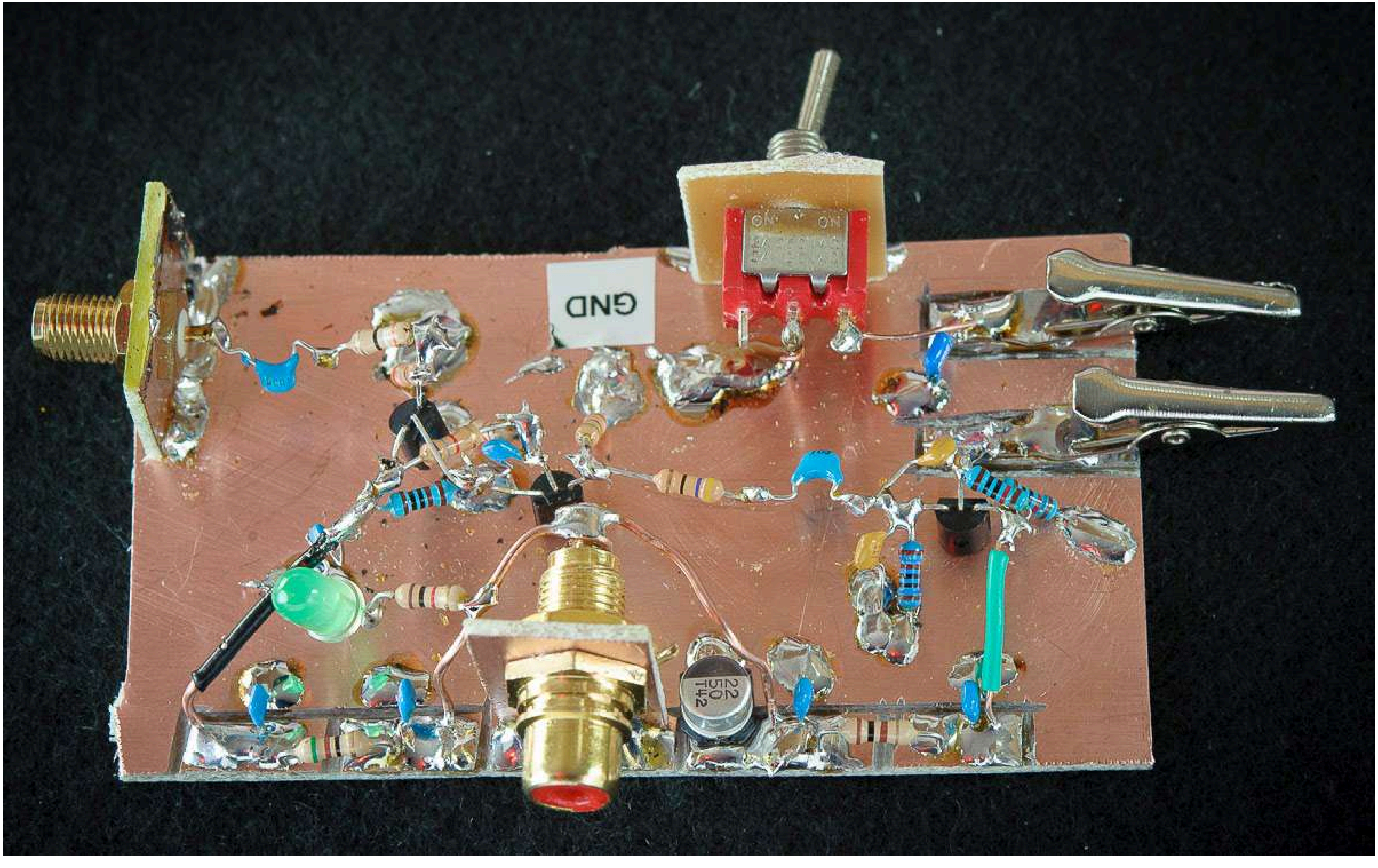
ANTENNA
GROUND
VK5JST
AERIAL ANALYSER
SET FREQUENCY
12.5-31MHz
6.8-16MHz
3.7-9MHz
2.2-5MHz
1.3-3MHz
DOWN
UP
07.100MHz R=047Ω
X=000Ω SWR=1.0
4DIGITS
POWER

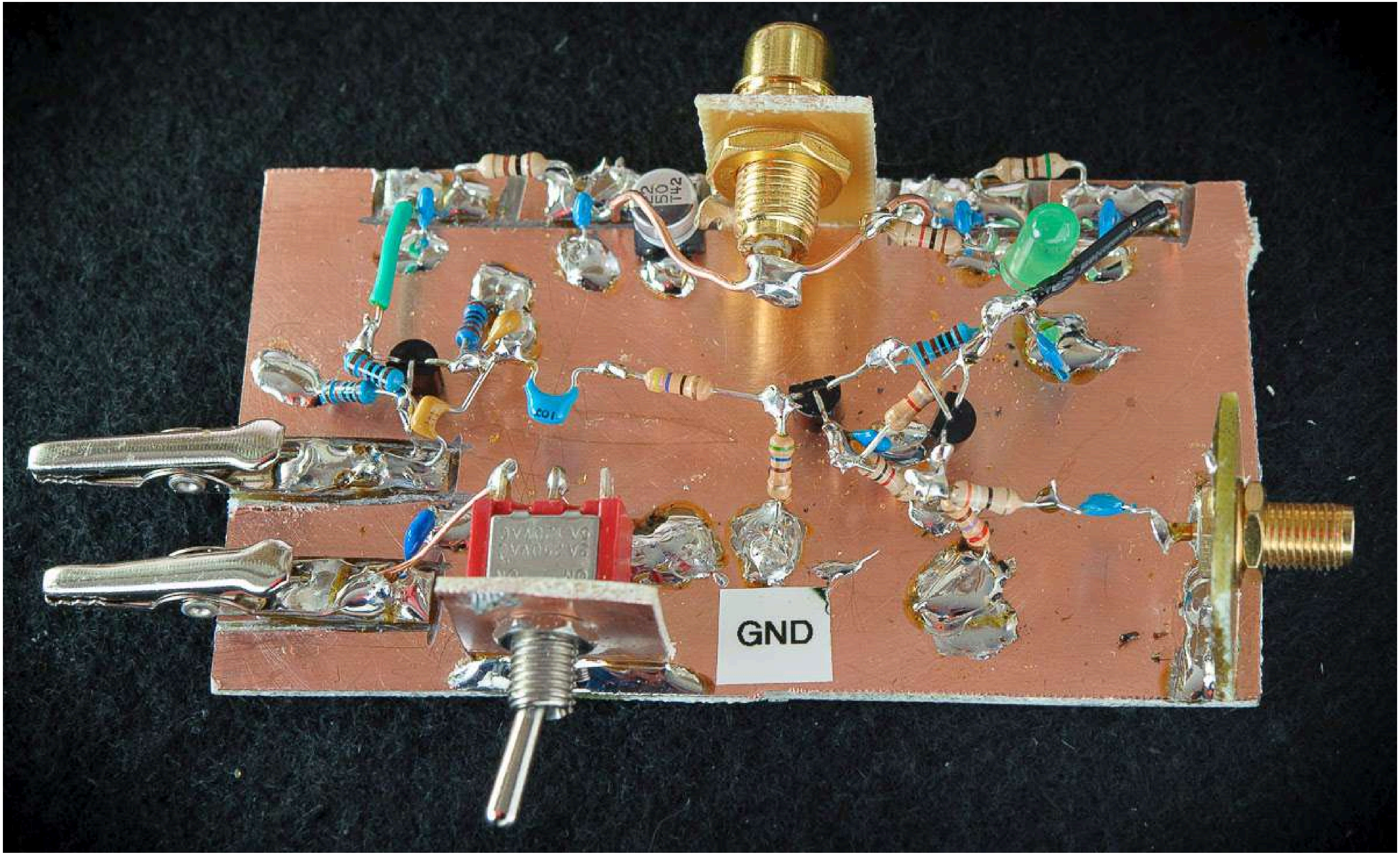

BRANE-POWER
brane-power.com

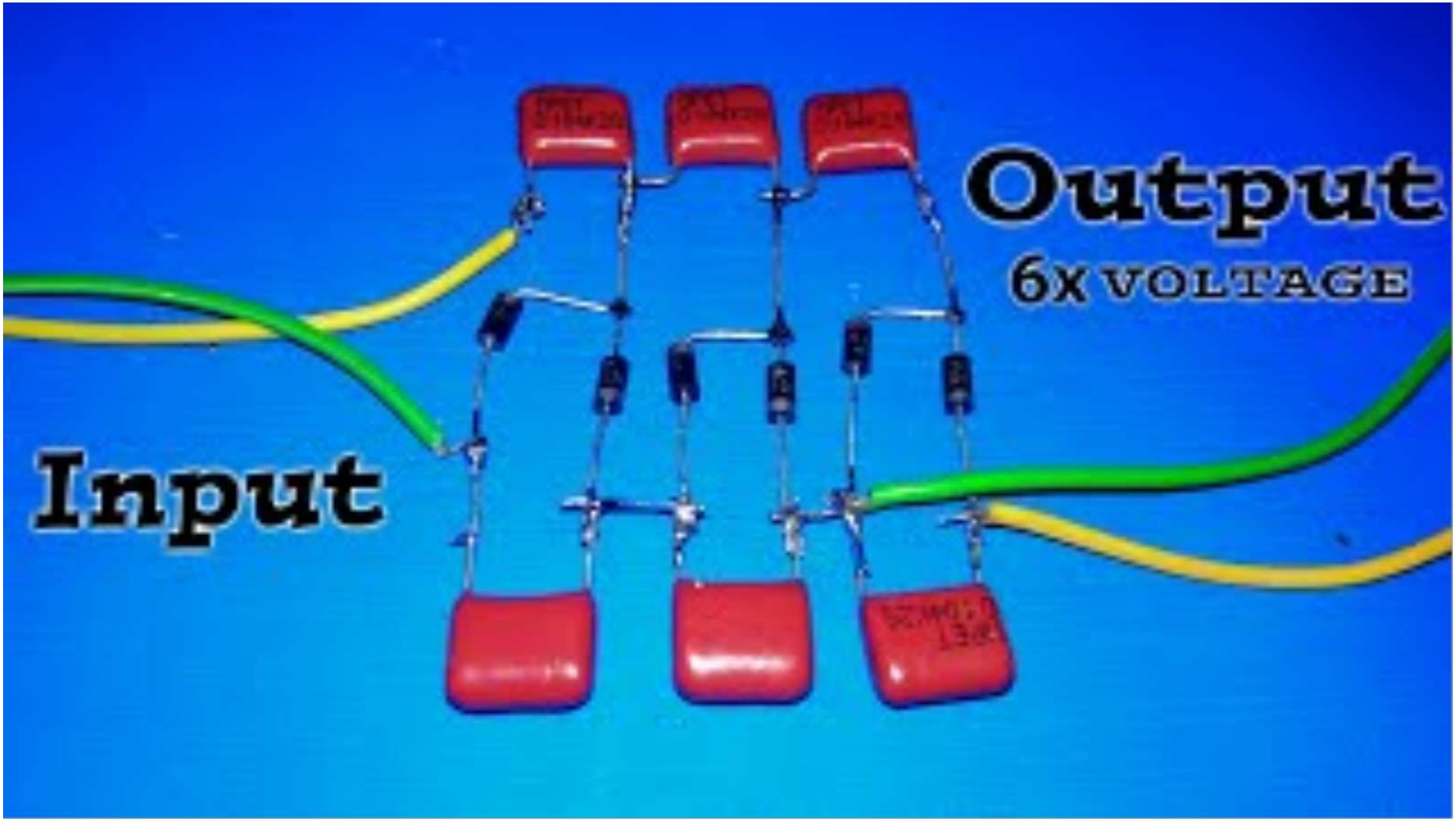

Existing plug fitted
to TW-232 desk
microphone
RJ45 plug
Inline
socket
Cross-over cable

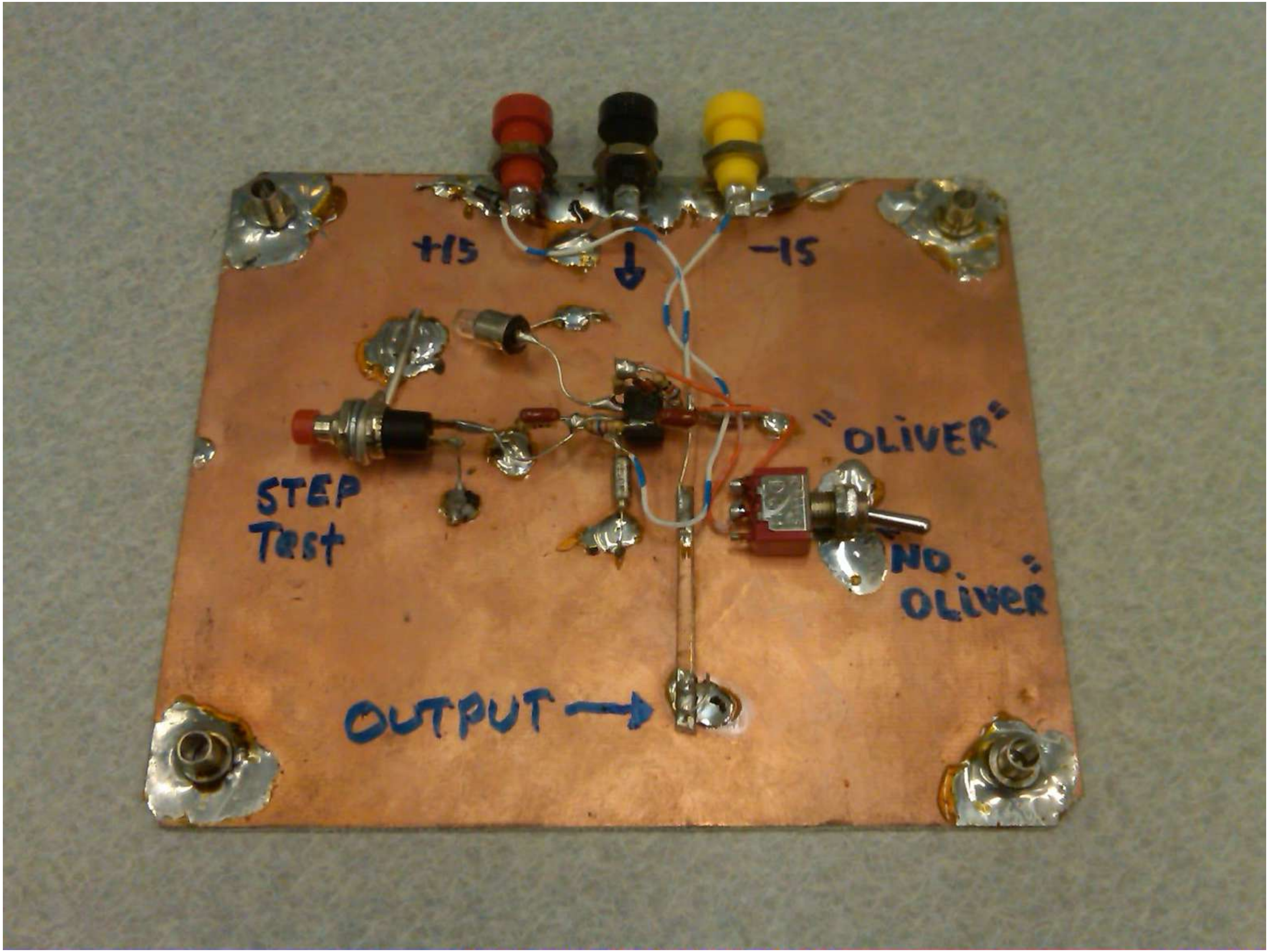

DANGER!
High Voltage RF!
DANGER!
High Voltage RF!
MØUKD



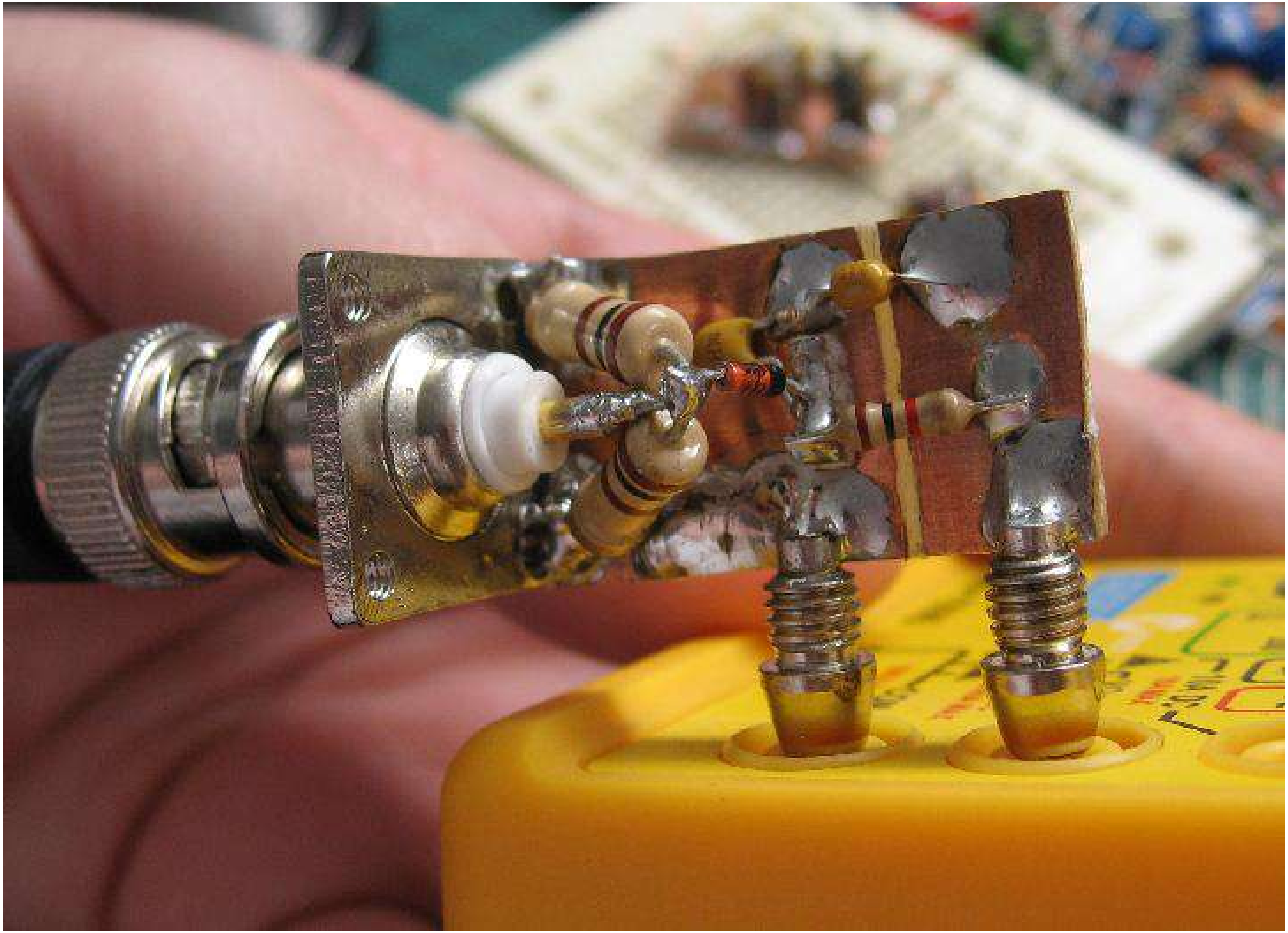

GND
ON ON


GND

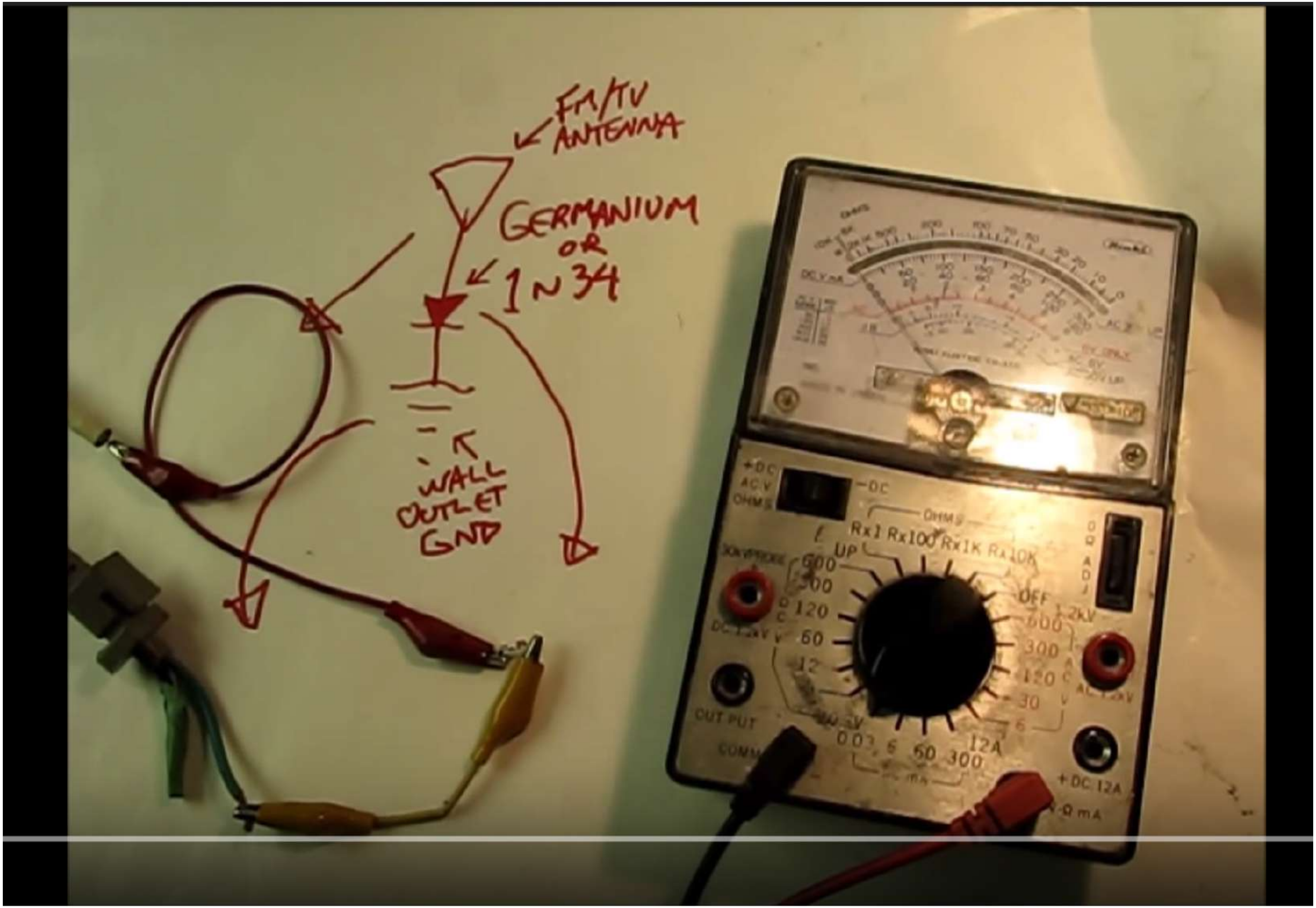

Output
6x VOLTAGE
Input

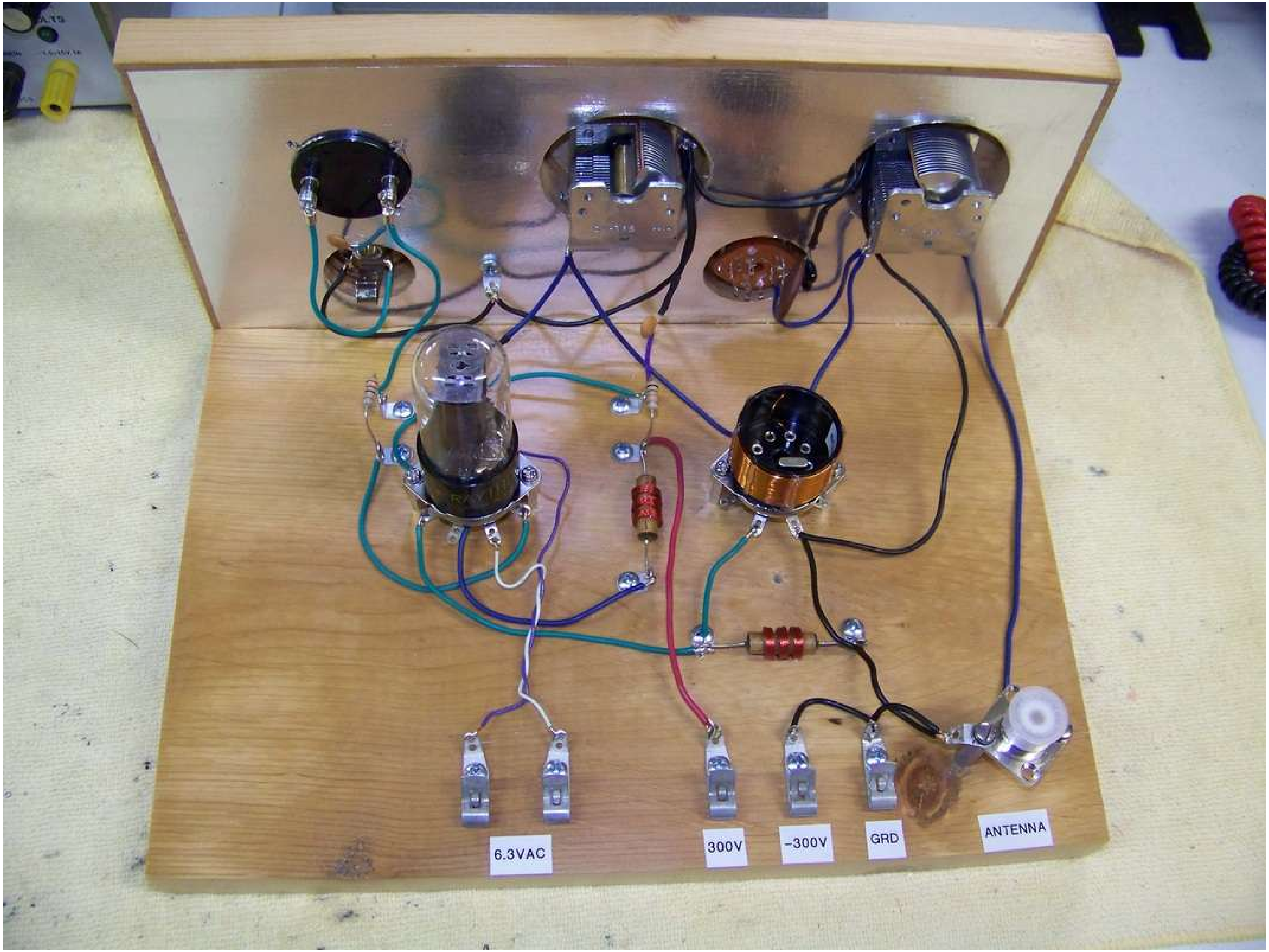

+15
-15
"OLIVER"
STEP
Test
"NO
OLIVER"
OUTPUT

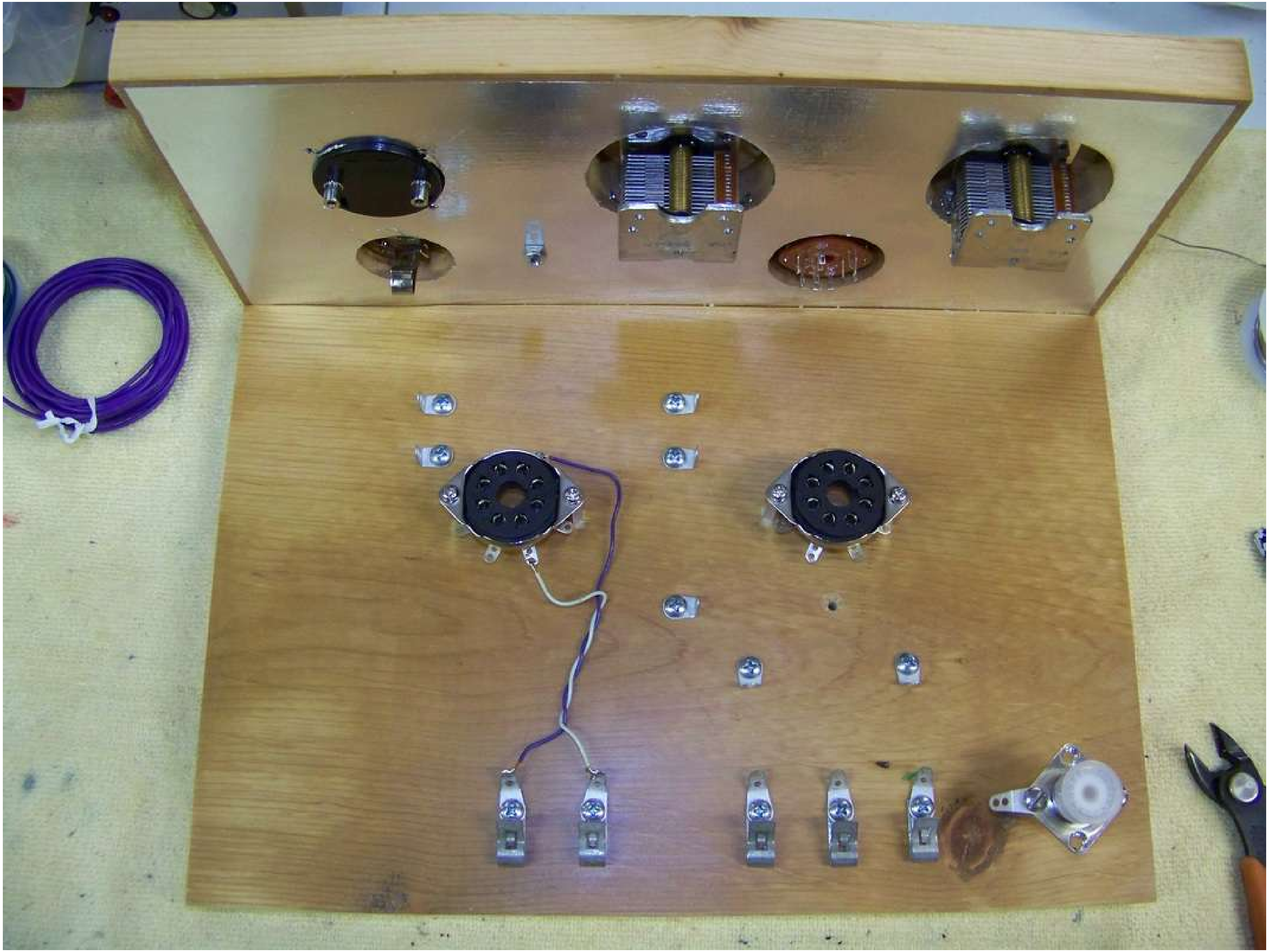

103

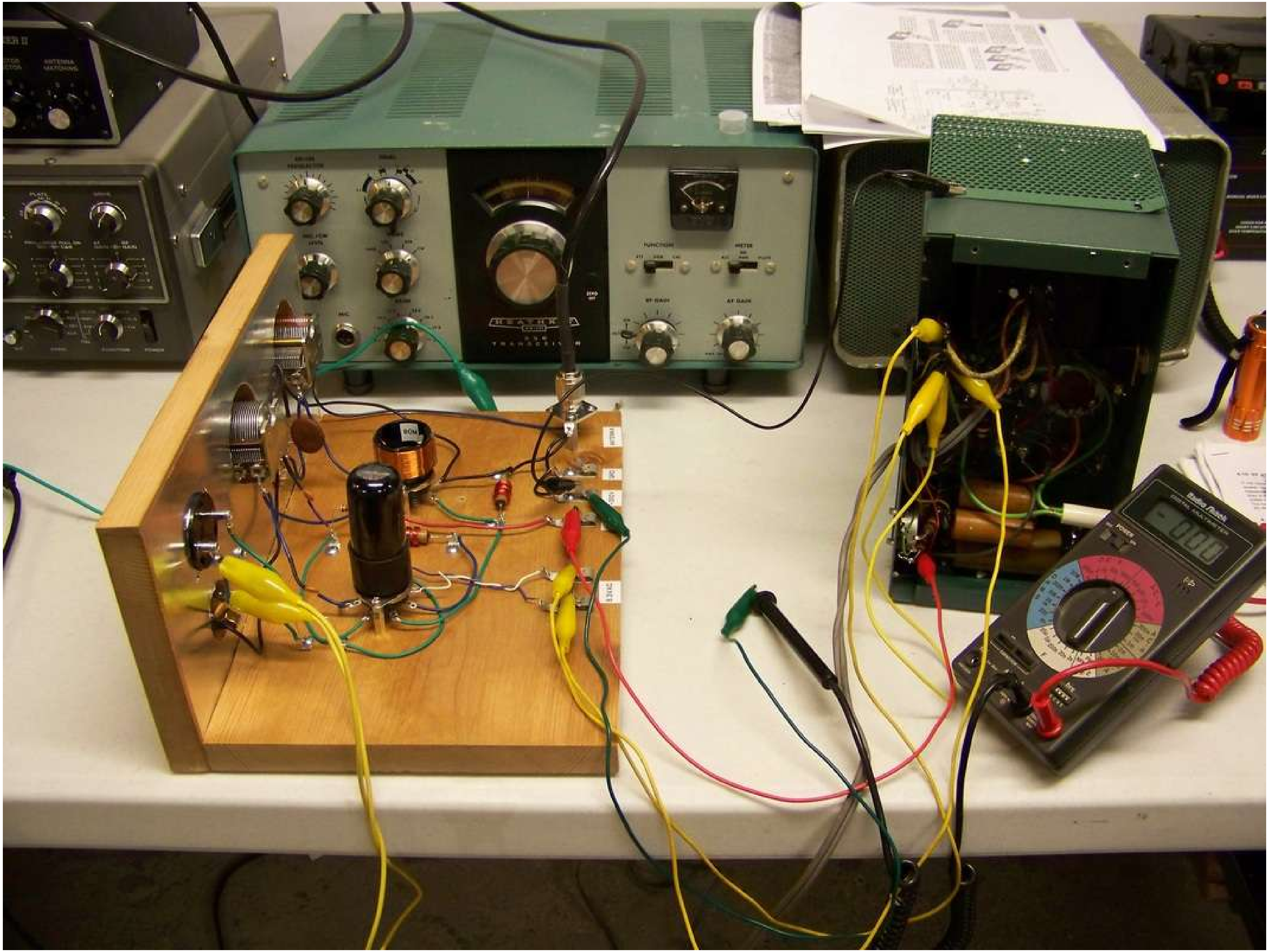



LENA
INDUTOR
WWW.RADIODX.OSL.B
0:38 / 2:51


FM/TV ANTENNA
GERMANIUM OR 1N34
WALL OUTLET GND
+DC AC V OHMS
-DC
OHMS
Rx1 Rx100 Rx1K Rx10K
OFF
OUT PUT
+DC 12A


6.3VAC
300V
-300V
GRD
ANTENNA





The "No Fibbin'" RF Field Strength Meter

The field strength meter is simple, effective and easy to construct. This project answers that age-old question—is anything radiating from this antenna?

The RF Signal Strength meter responding to my Kenwood TH-26AT transmitting on 147.900 MHz with 1 W, 2 feet away from the meter. The sensitivity control is set at mid range.

This low budget homebrew project will pay big dividends in making sure you get the best signal out of your antenna system. And it needs no batteries.

In the 25 years I have spent working as a telecommunications technician, one of the most useful, yet simple, pieces of test gear I have used is the RF field strength meter. Its only job is to give you a relative signal strength reading of near field RF signal radiated from a transmitting antenna. After the bench testing is done and antenna VSWR is measured, nothing else will give you a better idea of transmitter and antenna performance than the RF field strength meter.

Any ham who has a 146 MHz or a 440 MHz hand-held transceiver is at the mercy of the sales brochures when choosing the best flexible [rubber duck] antenna for your radio. How many times have you *not* been able to work a repeater or work simplex nearly as well as someone else who has a similar radio or one with even less RF output power than yours? How can you tell if the wire inside a flexible antenna has broken or if the antenna doesn't radiate well? The RF field strength meter will soon reveal how well (or how poorly) your antenna is radiating. The meter is great for determining the front to back ratio and forward gain of a Yagi or quad. You can also compare relative signal strength between a ¼, ½ and ⅝ wavelength antenna on your vehicle. You might be surprised at the results!

The "No Fibbin'" field strength meter can be made using parts that many hams already have around the shack. The best results will be obtained using germanium or Schottky small signal diodes, a metal enclosure and an analog meter movement (which has a low full-scale deflection current). The other component values are not critical; close is good enough. All the parts can be mounted on a small pre-punched PC board or they can be wired point-to-point without a PC board. In either case, keep the component leads as short as pos-

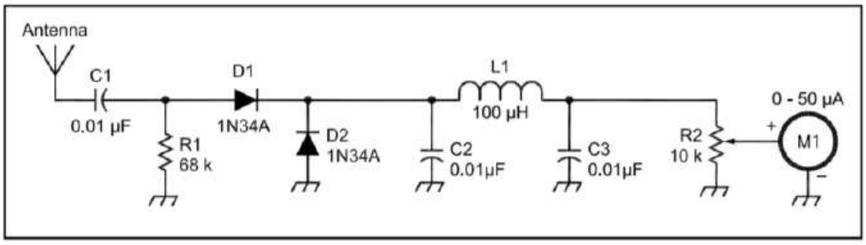


Figure 1—Schematic diagram of the signal strength meter. RS = Radio Shack (www.radioshack.com/).

C1-C3—0.01 µF capacitors (RS 272-1051 or equiv).
D1, D2—1N34A diodes (RS 276-1123).
L1—100 µH inductor (RS 273-102).
M1—Analog meter, 50 µA (RS 910-0360).
R2—Sensitivity control potentiometer, 10 kΩ (RS 271-1715).
Antenna—BNC female chassis mount socket. Antenna selection should match the frequency band for VHF and UHF. A random length of wire might work best for close field measurements on HF to 40 meters. Metal box enclosure is mandatory.

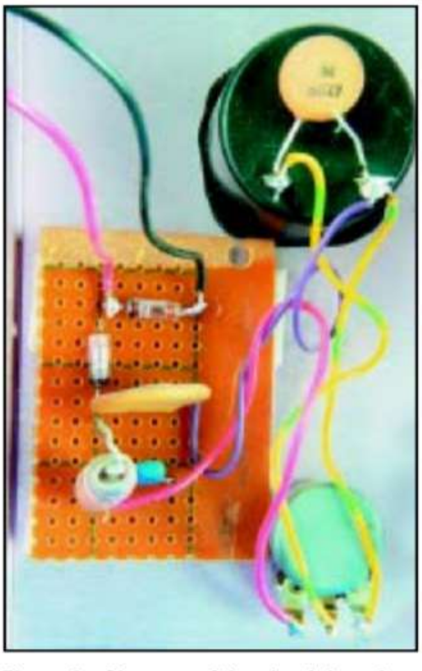


Figure 2—Close up of the circuit board.

Figure 3—The case, circuit board and antennas for the field strength meter.

FEEDBACK

◊ An error appears in Figure 1 of "The 'No Fibbin' RF Field Strength Meter" (Aug 2002 *QST*, p 28). The correct way to wire D2 is the anode to ground and the cathode to the anode of D1 (also the junction of R1 and D1). As shown in the photos, C1 is optional and an additional 0.01 µF bypass capacitor can be installed across the meter movement.—*John Noakes, VE7NI*

STRAYS

MILITARY RADIO COLLECTORS TO MEET

◊ The Military Radio Collectors Association will hold its third annual meet at the West End Fairgrounds, Gilbert, Pennsylvania, September 6-8, 2002. Hours are 0800 to 1700 local time. Activities include equipment displays, on the air operation, formal presentations and a swapmeet. For more information, see **www.milradio.org/** or contact Pete Hamersma, WB2JWU, PO Box 467, Holderness, NH 03245, e-mail **pehamers@worldpath.net**.

Previous • Next Strays

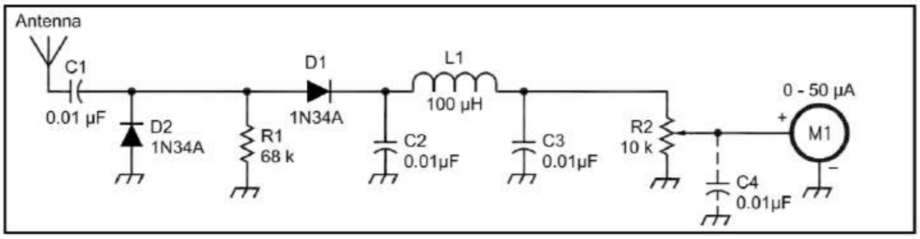
FEEDBACK

◊ In the item concerning magnetic headings in "The Doctor is IN," *QST*, Jul 2002, p 47, the Doctor reversed his plus and minus signs. The first paragraph should read:

The ARRL maps are calibrated in True degrees, referred to True North ("straight up" on the maps). Magnetic headings are calculated by taking the True headings and subtracting the Magnetic Declination (also called the Magnetic Variation in nautical applications). For example, if the map shows a variation (declination) of 12° east, this means that Magnetic North is 12° east of "straight up." So, a heading of 45° True is equivalent to a magnetic heading of 45° – 12° east = 33° magnetic. For a westerly variation (for example 6° west), add the value for variation. Thus, 45° True + 6° west = 51° magnetic. An old mariner's ditty, "east is least; west is best," can help you remember that you subtract an easterly declination or add a westerly declination to convert True to Magnetic.

◊ An error appears in Figure 1 of "The 'No Fibbin' RF Field Strength Meter" (Aug 2002 *QST*, p 28). The correct way to wire D2 is the anode to ground and the cathode to the anode of D1 (also the junction of R1 and D1). As shown in the photos, C1 is optional and an additional 0.01 µF bypass capacitor can be installed across the meter movement.—*John Noakes, VE7NI*

Previous • Next Feedback



Revised Figure 1

mercy of the sales brochures when choosing the best flexible [rubber duck] antenna for your radio. How many times have you *not* been able to work a repeater or work simplex nearly as well as someone else who has a similar radio or one with even

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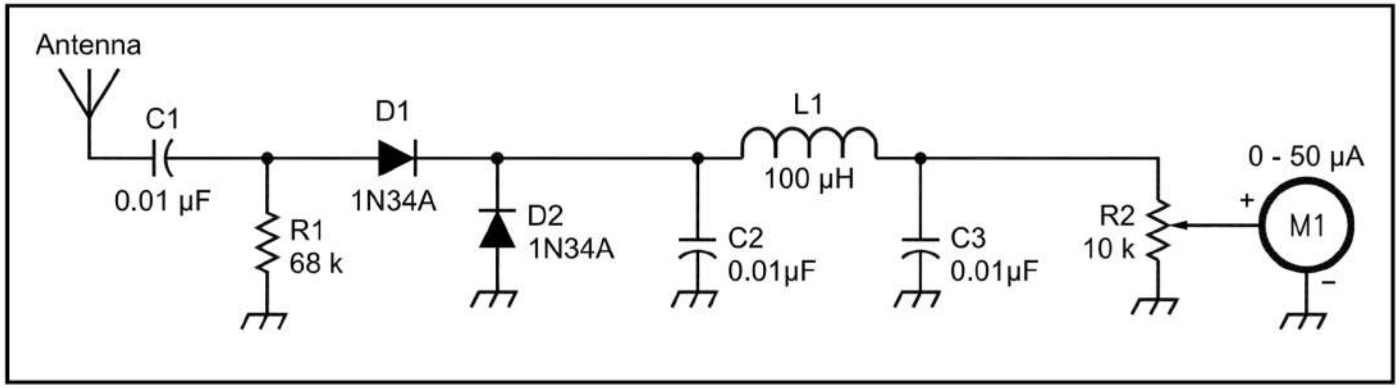

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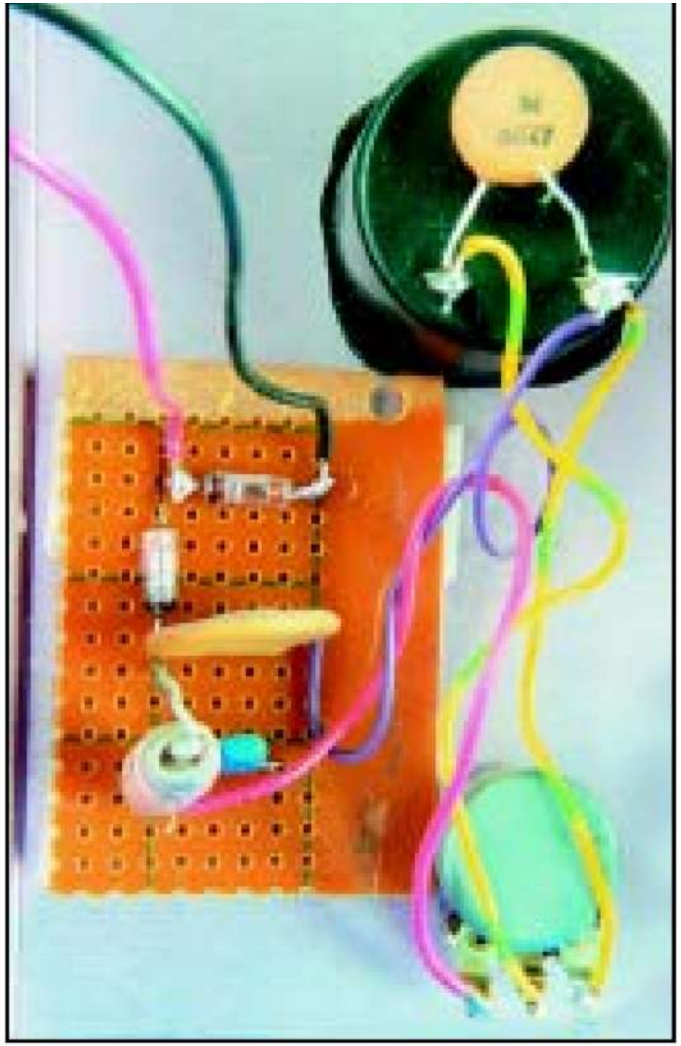

Figure 2—Close up of the circuit board.

Figure 3—The case, circuit board and antennas for the field strength meter.

FEEDBACK

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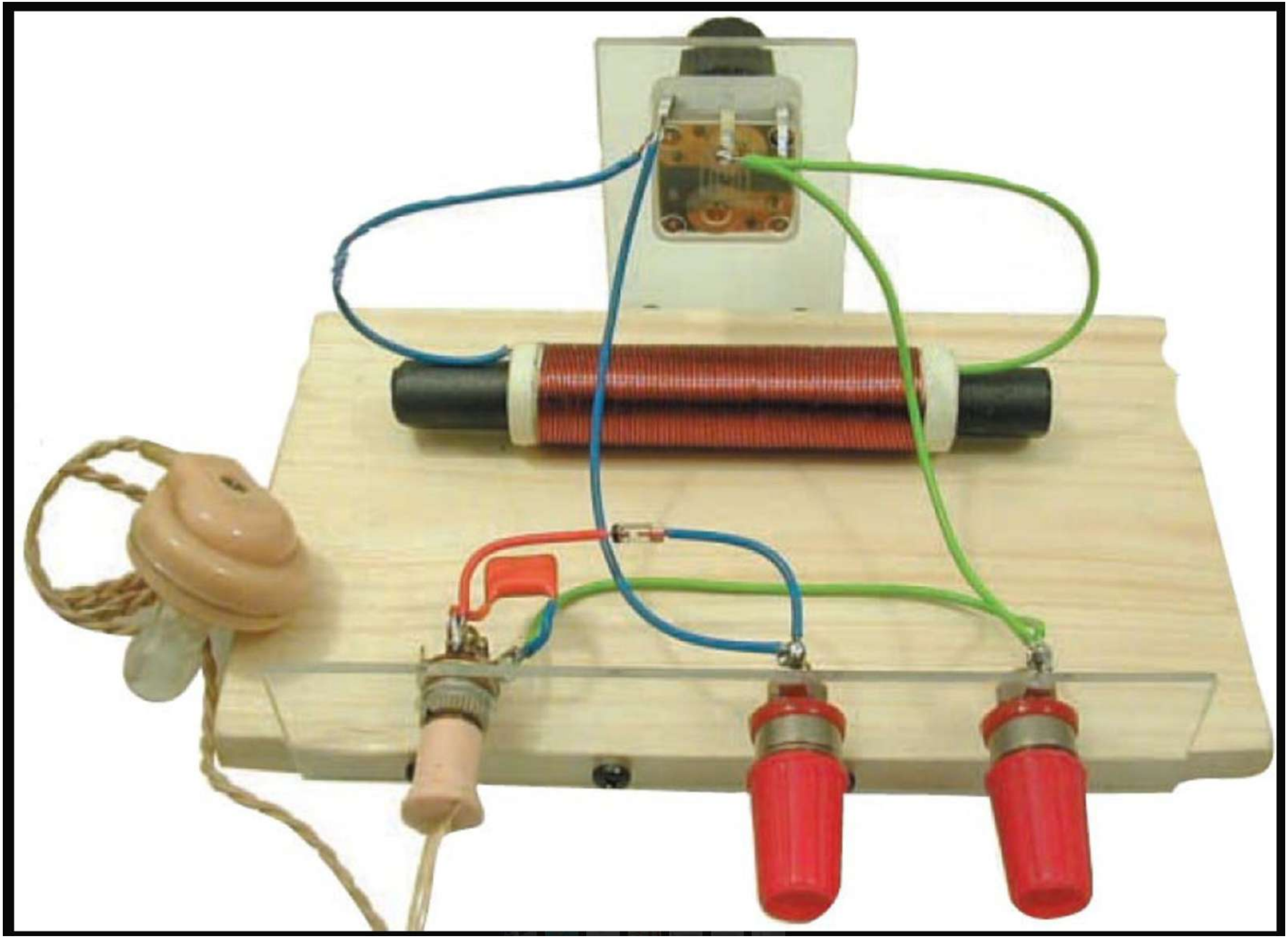
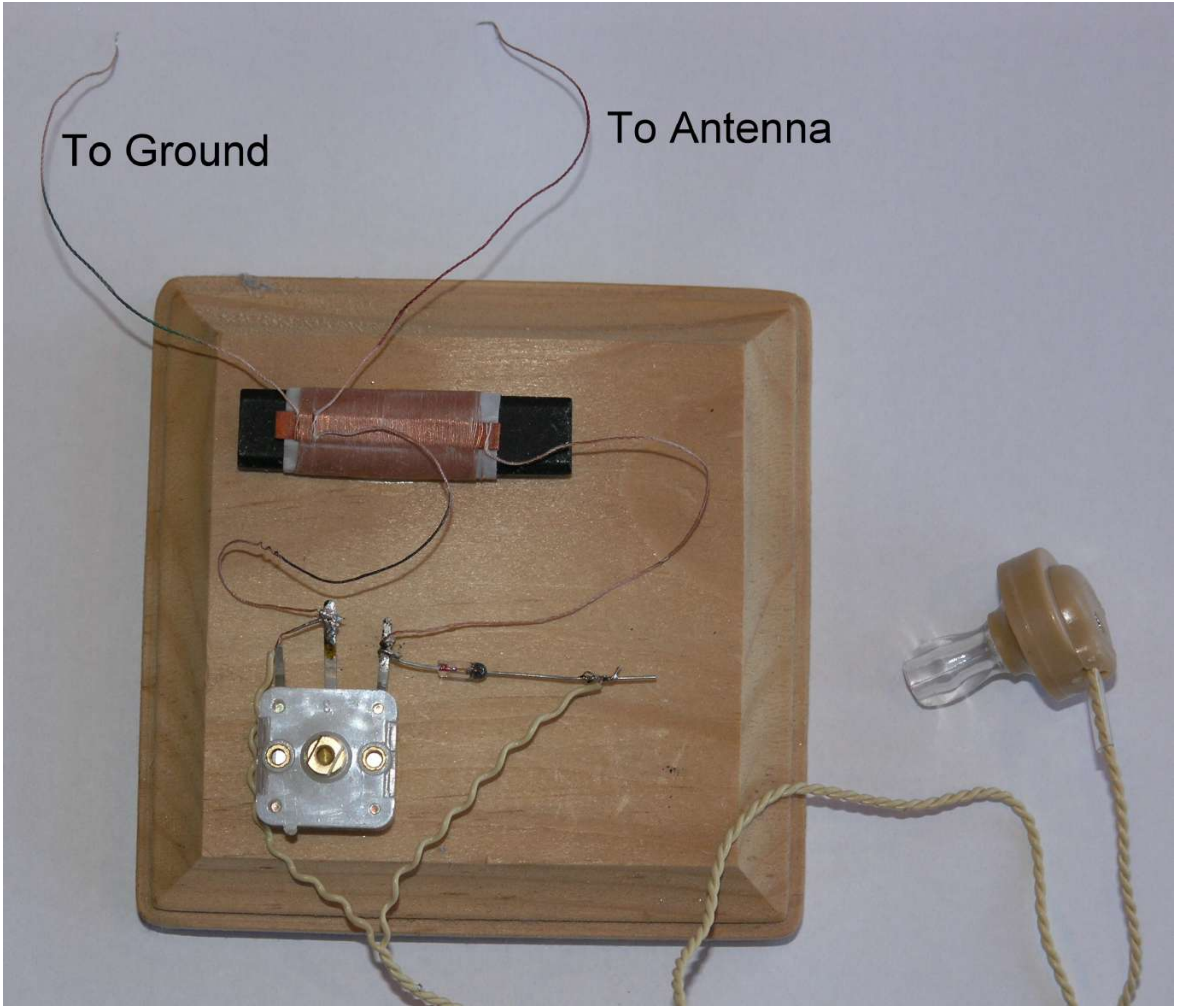
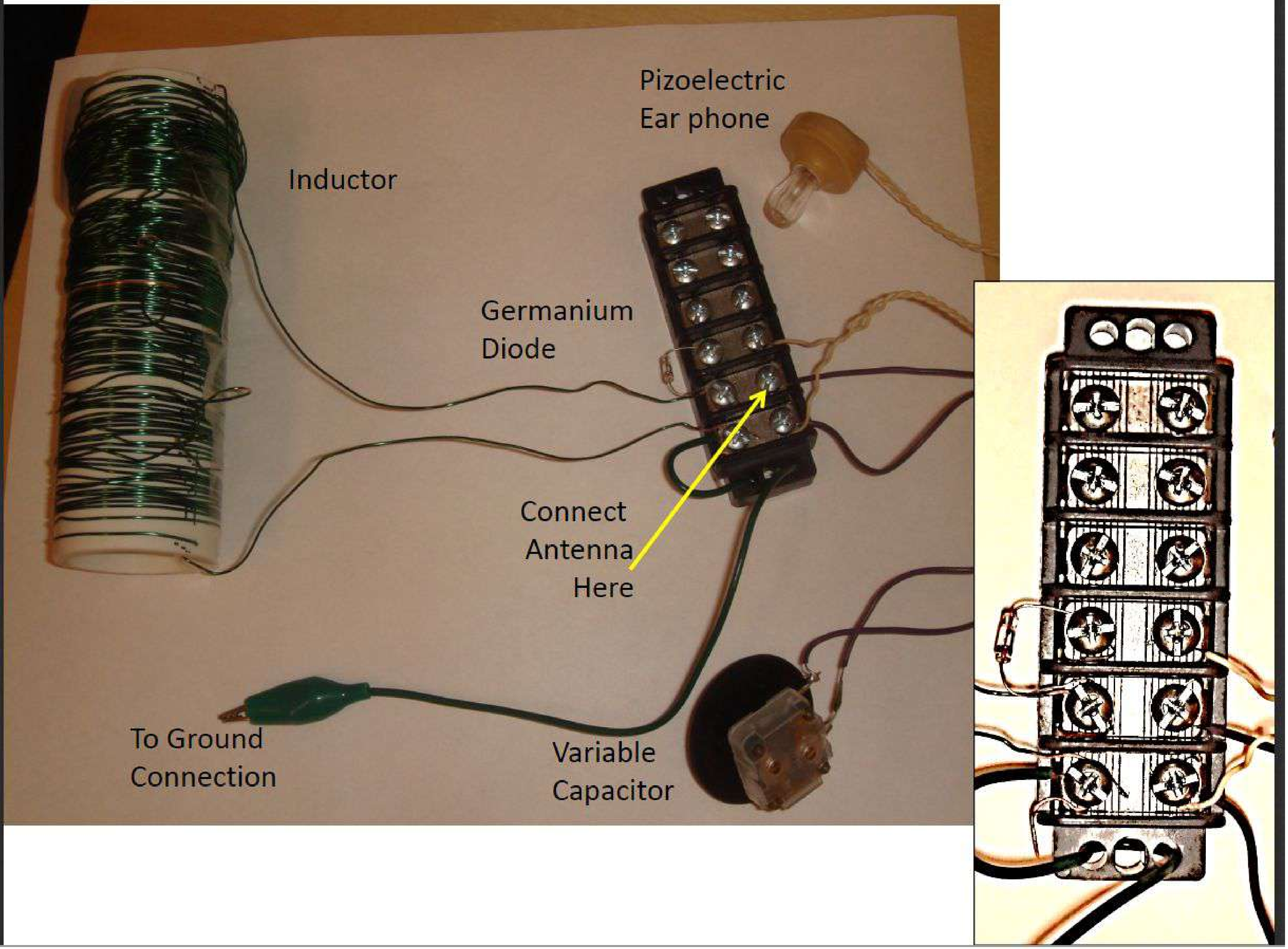
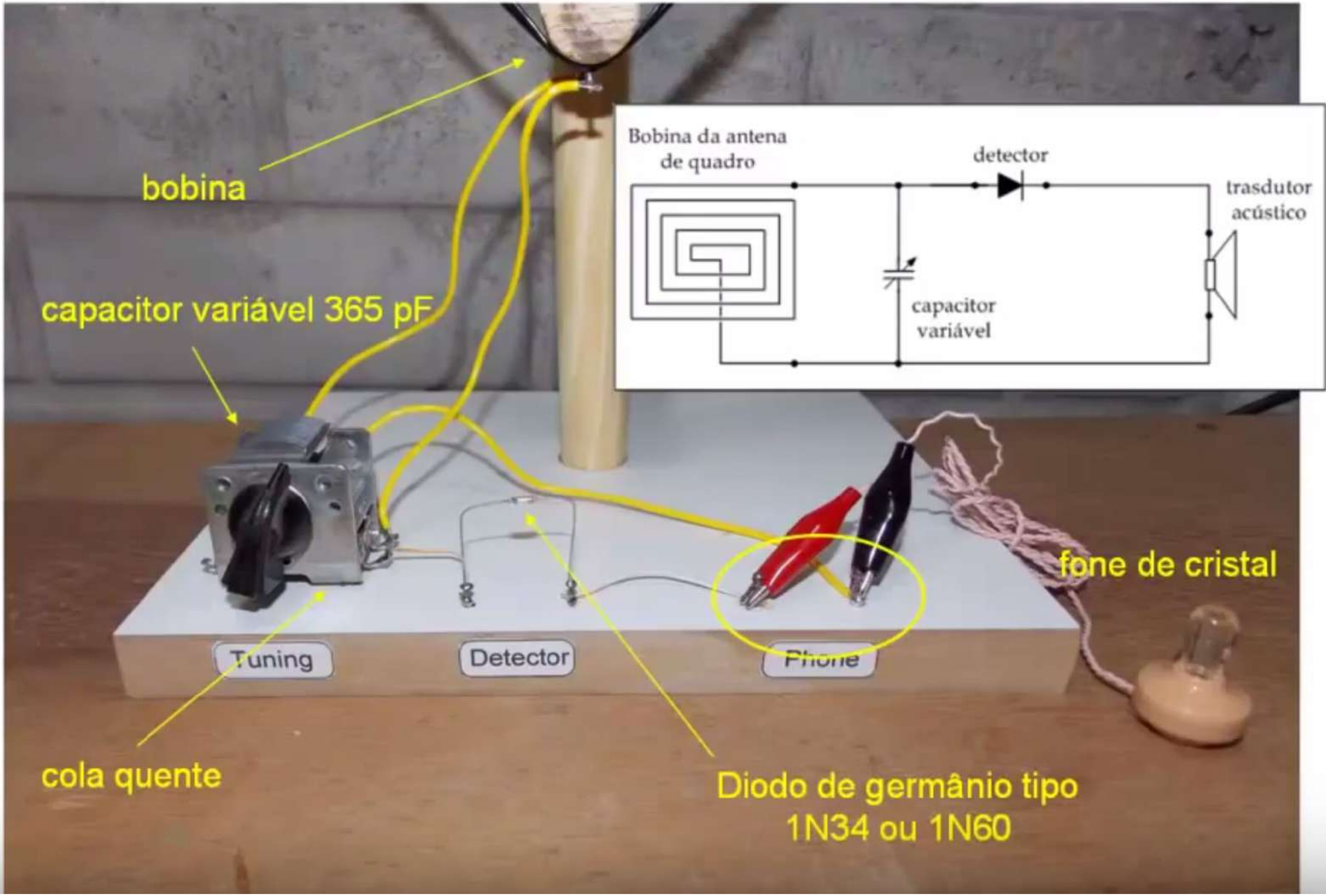



To Ground
To Antenna


Pizoelectric
Ear phone
Inductor
Germanium
Diode
Connect
Antenna
Here
To Ground
Connection
Variable
Capacitor



bobina
capacitor variável 365 pF
cola quente
Tuning
Detector
Phone
Diodo de germânio tipo
1N34 ou 1N60
fone de cristal
Bobina da antena
de quadro
detector
trasdutor
acústico
capacitor
variável

Radio a galena FM

per la "banda commerciale" 88 – 108 MHz

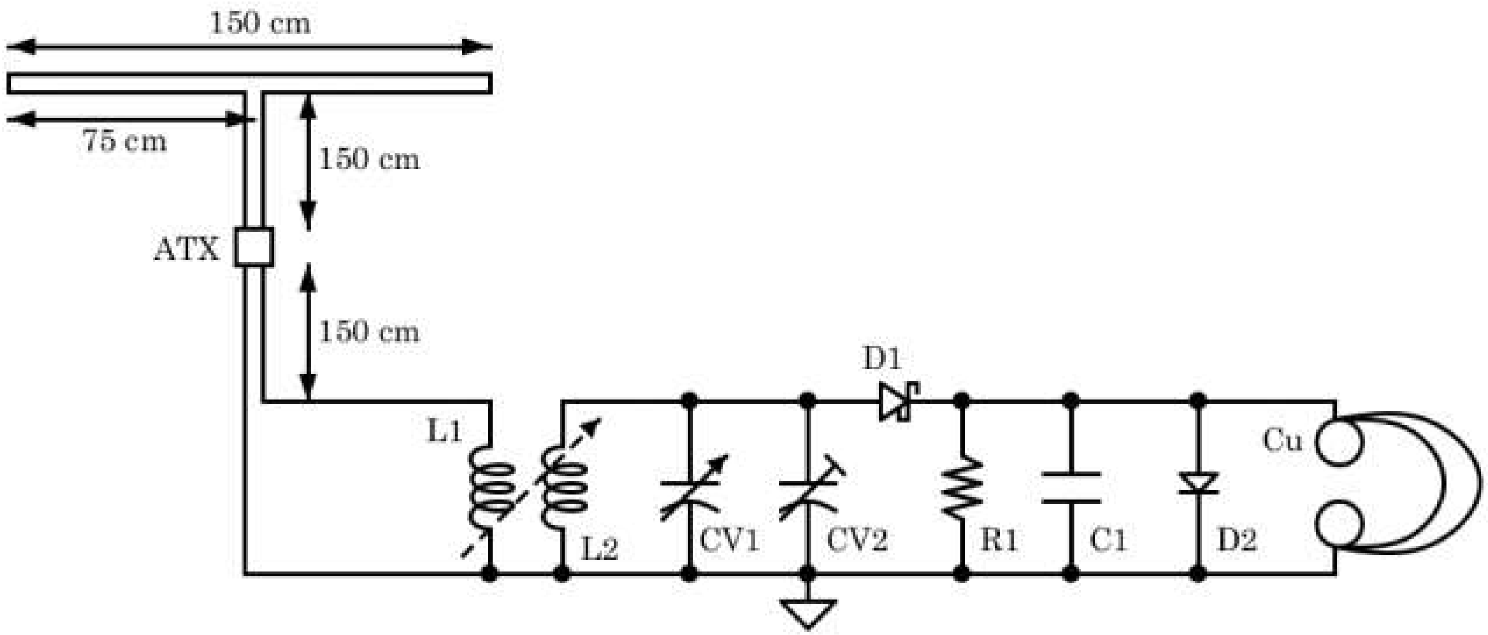


Figura 2: Schema elettrico della radio a galena FM.

I componenti adoperati sono:

- L1 = vedi testo (sezione Bobine L1 e L2);
- L2 = $0.137\mu H$, vedi Figura 7;
- CV1 = Johnson 160-211-1 $(2.7 - 10.8)pF$ per sezione;
- CV2 = trimmer tubolare da $(5 \div 15)pF$;
- D1 = diodo Schottky Skyworks modello SMS7630-001;
- D2 = diodo di segnale 1N4148;
- R1 = $47k\Omega$, 1/4W;
- C1 = $100pF$ ceramico a disco;
- Cu = cuffie ad alta impedenza ($2k\Omega$ o superiore);
- ATX = connettore ATX femmina e header pin;
- Due connettori banana femmina.

Figura 8: Vista posteriore del cablaggio

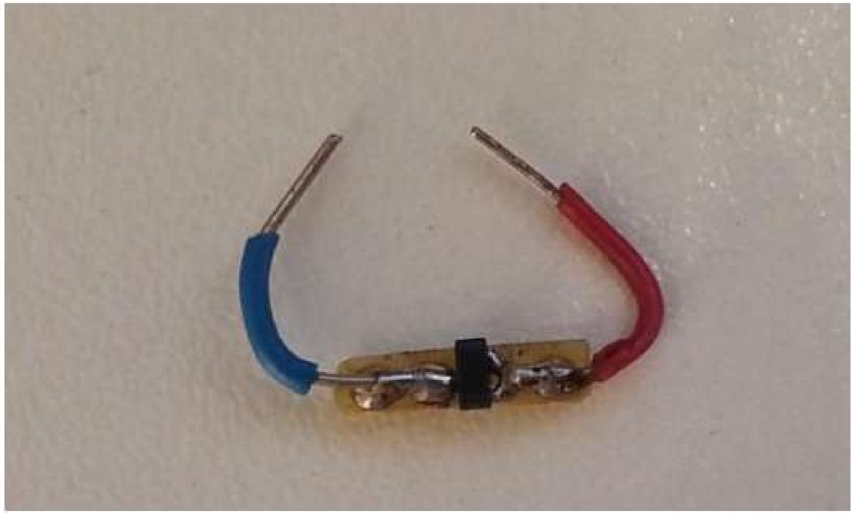
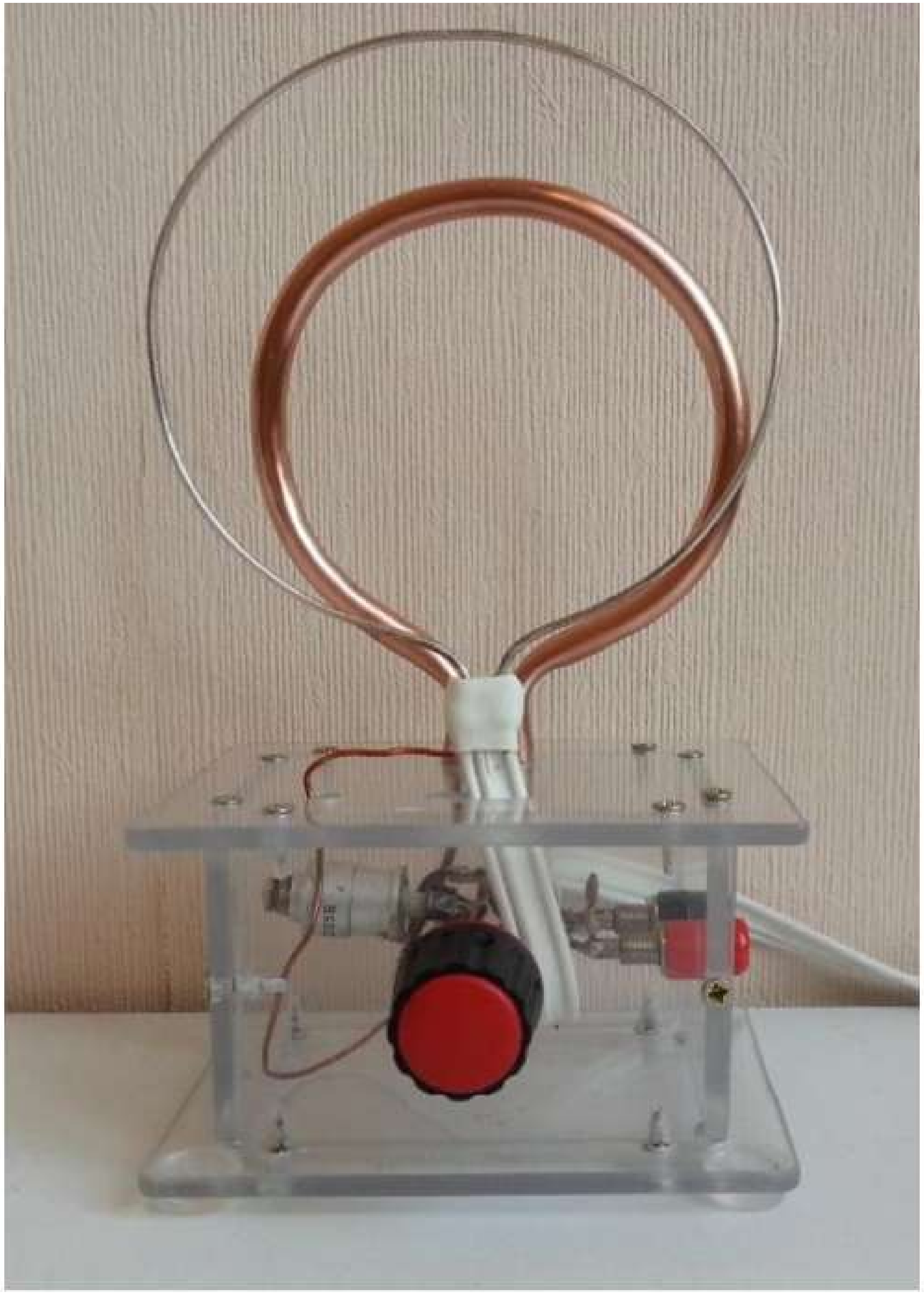
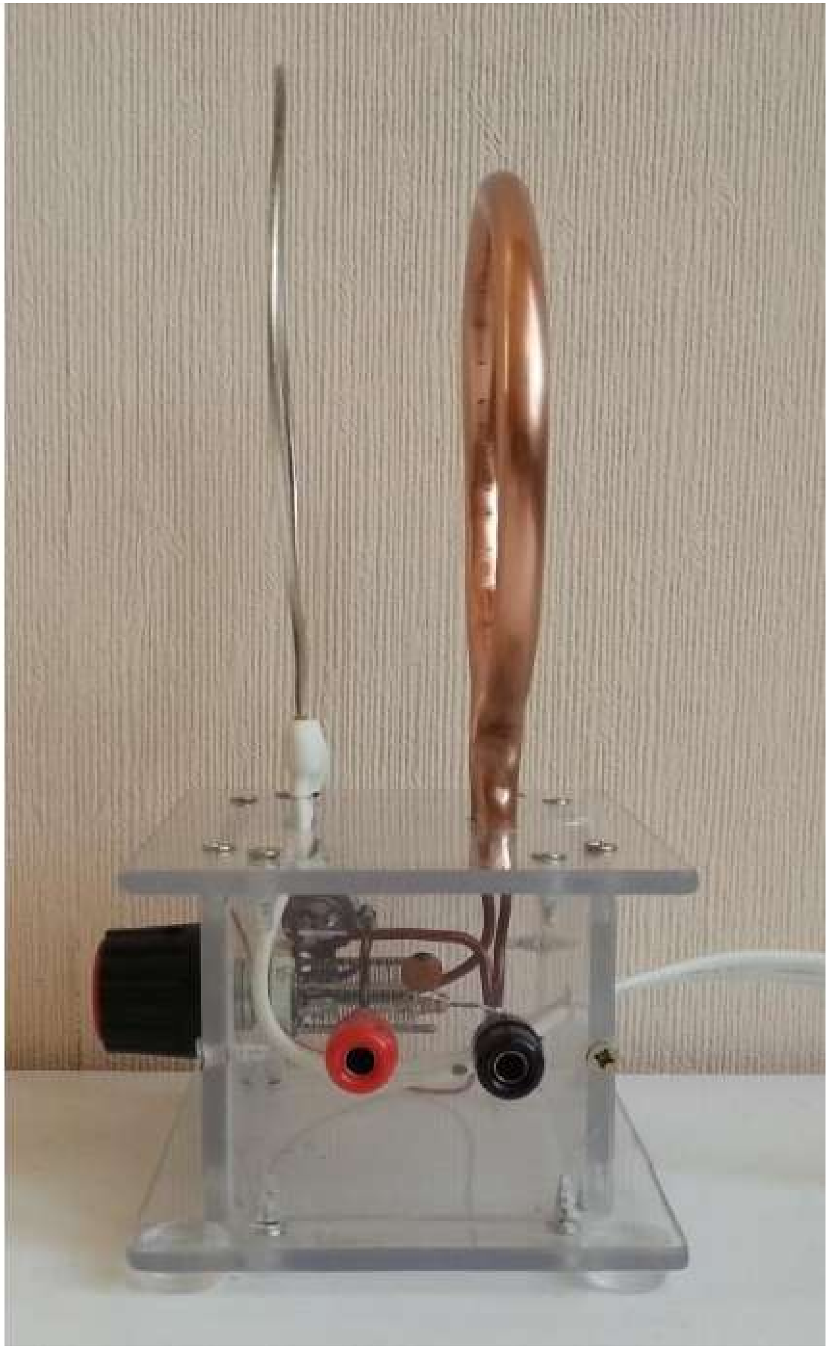
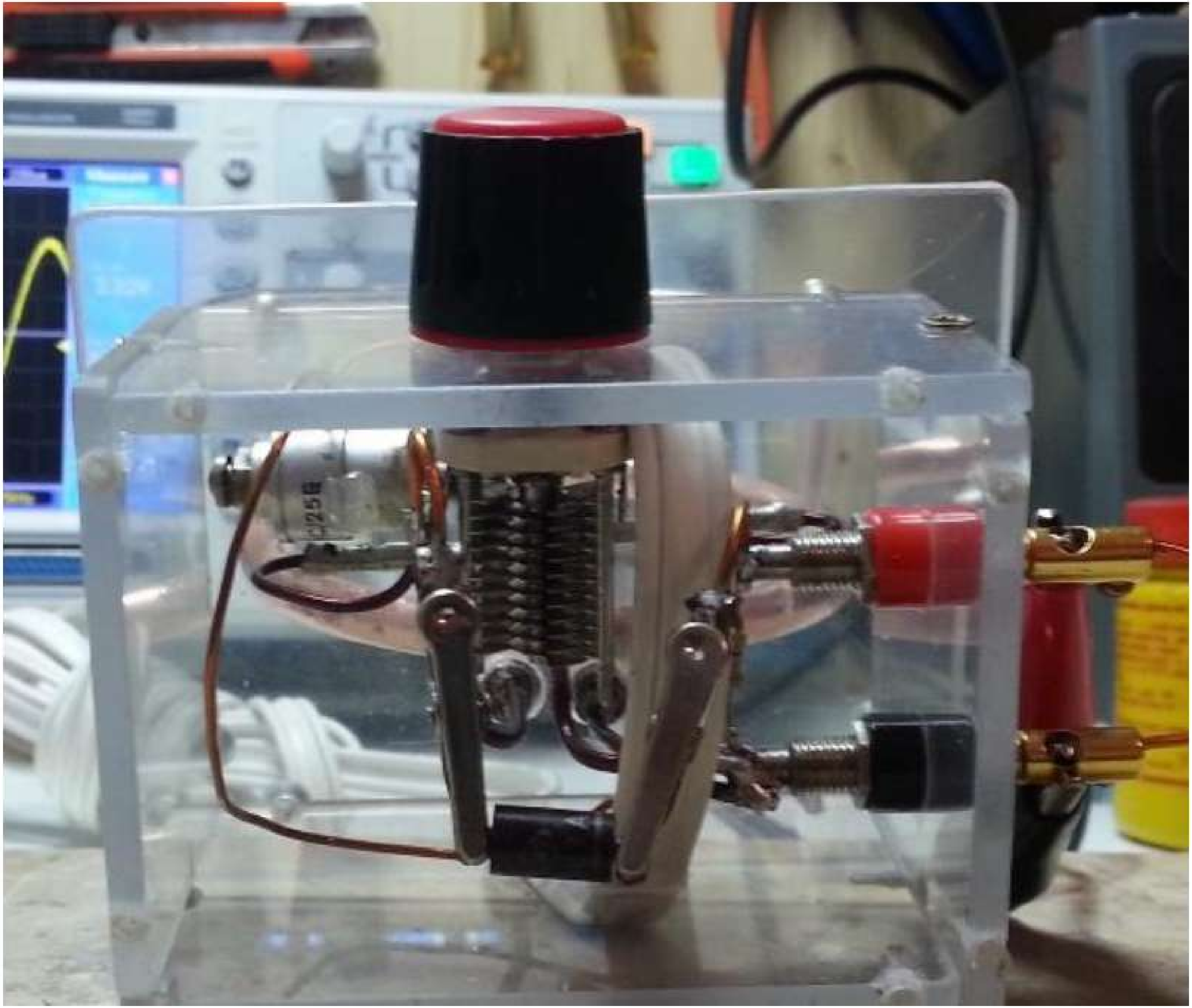


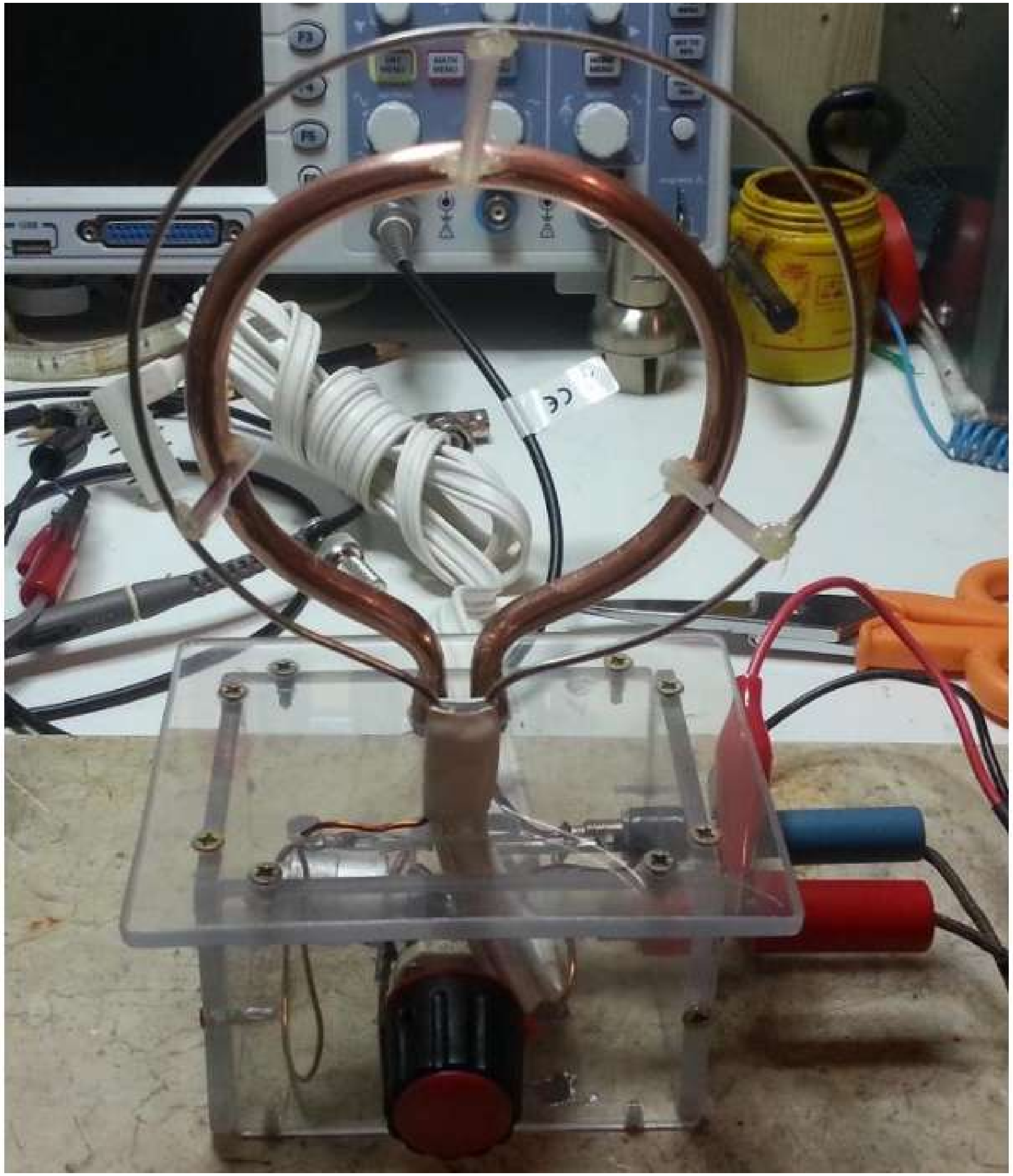
Figura 9: Particolare del diodo sulla basetta millefori.

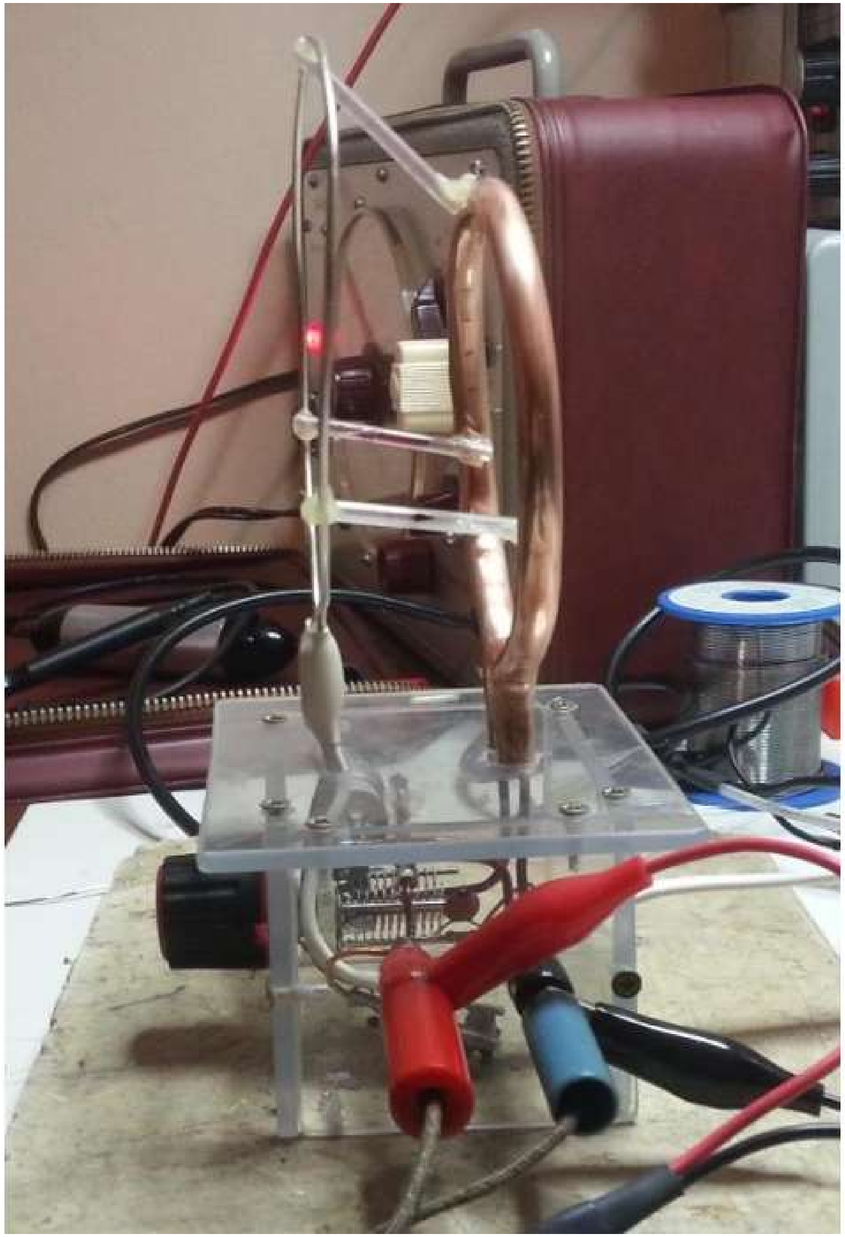
Figura 10: Cablaggio del diodo rivelatore.

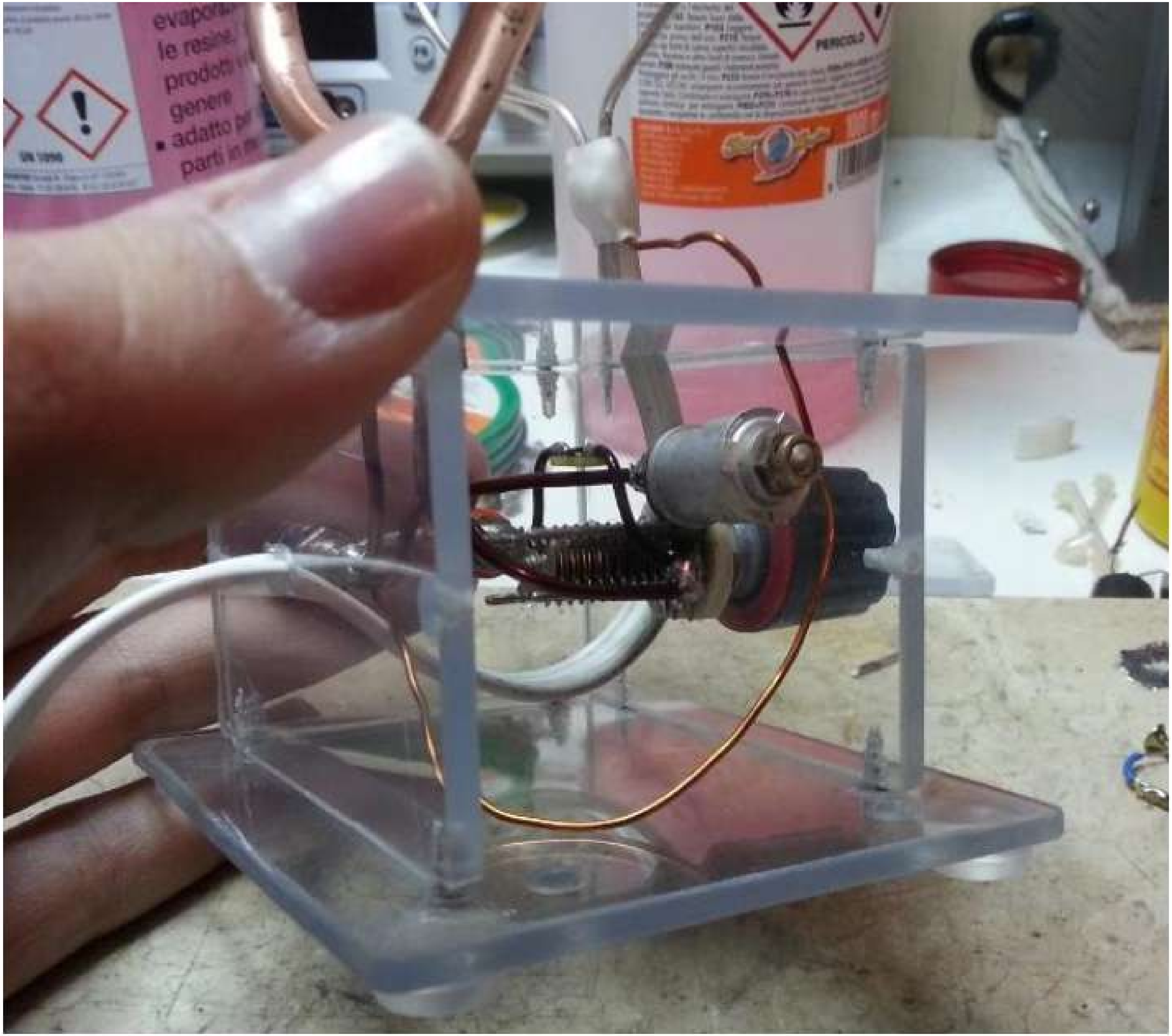


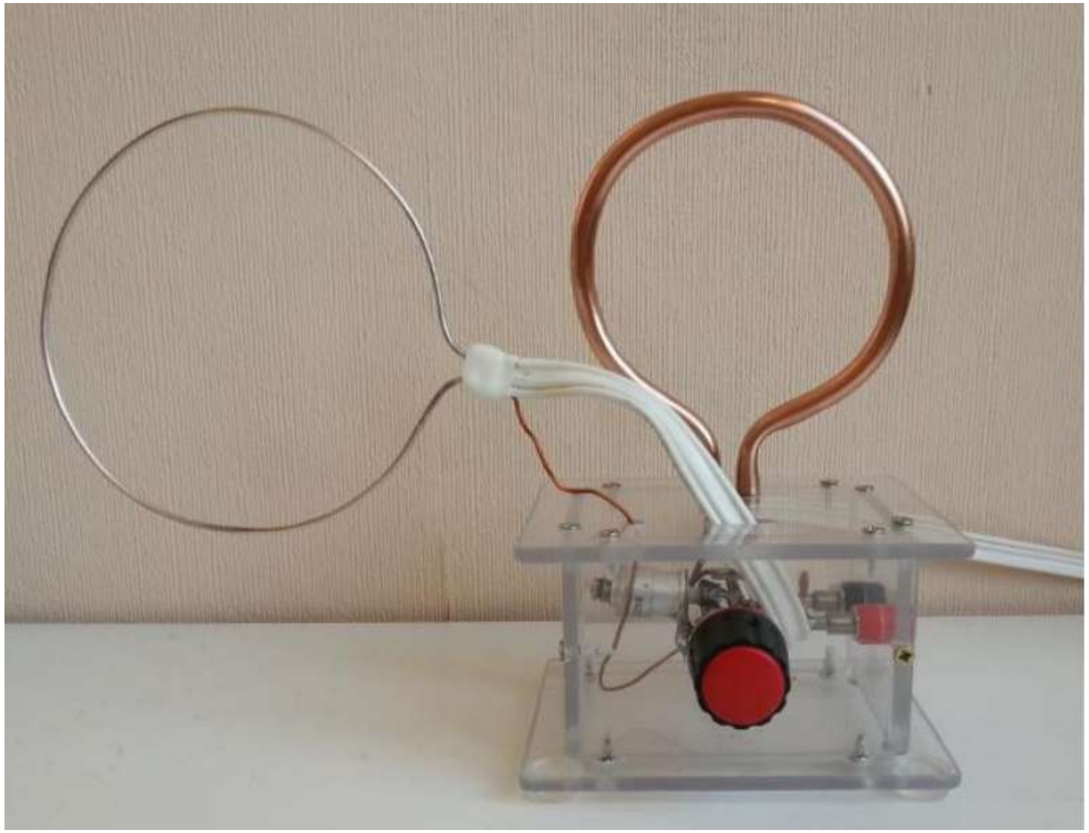
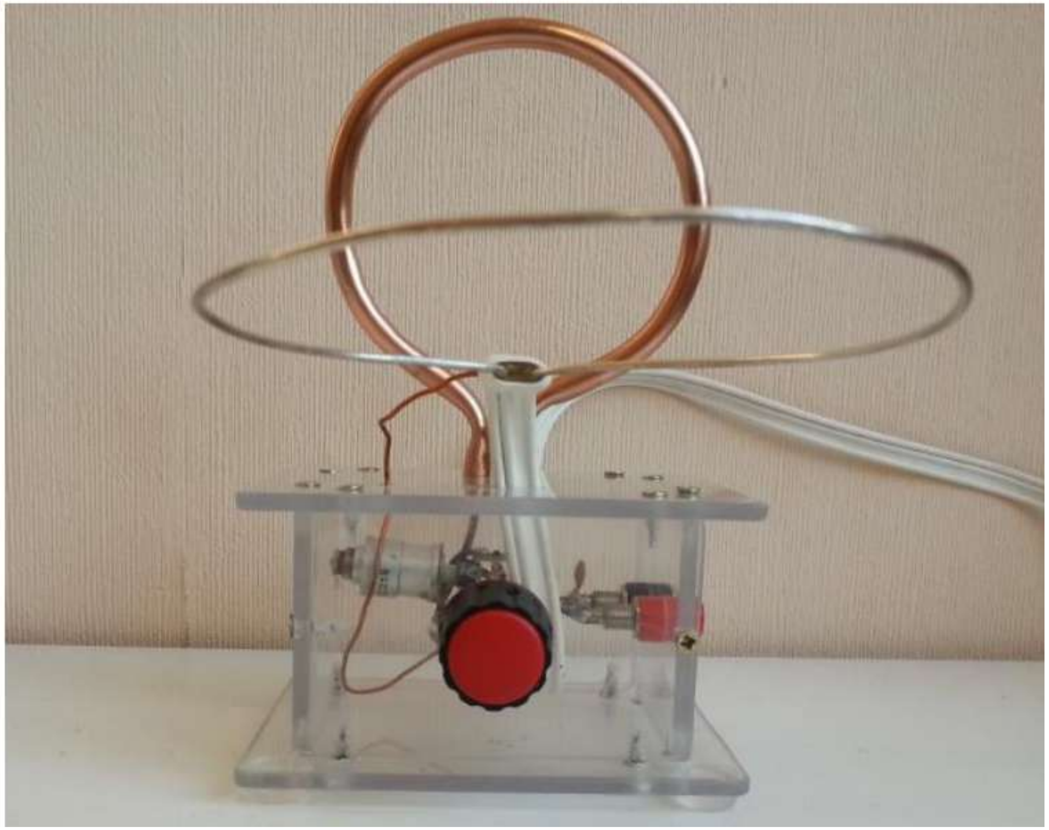



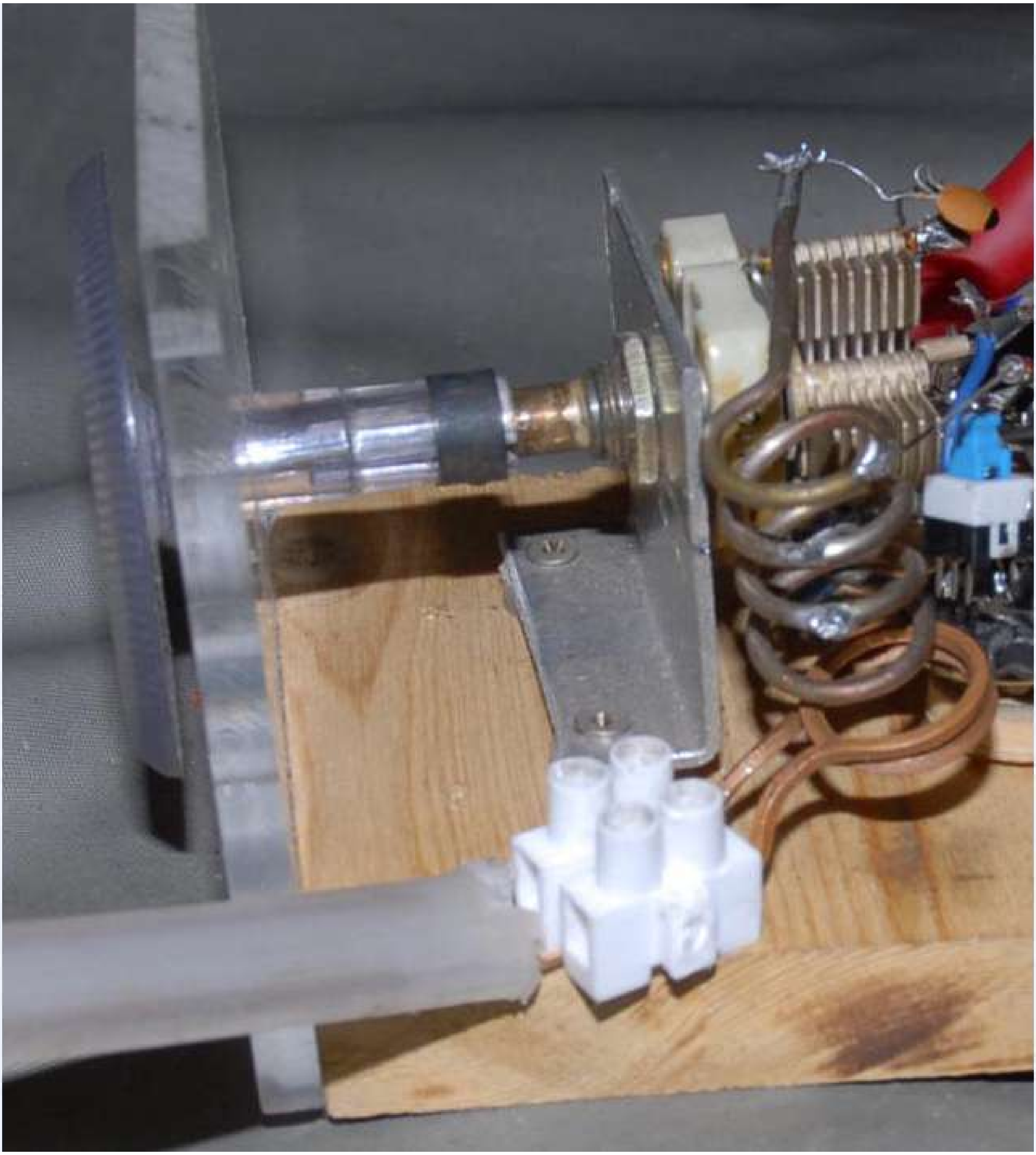


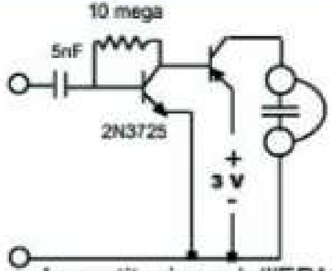




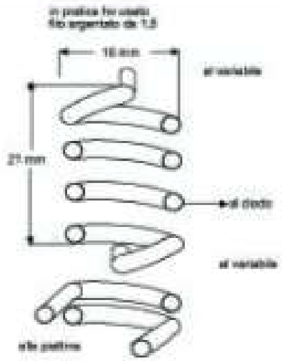

PERICOLO

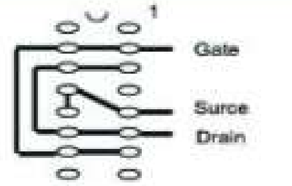





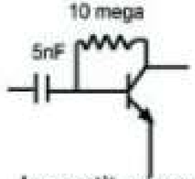


In sostituzione dell'EPAD: fa fortissimo ma occorre una pila



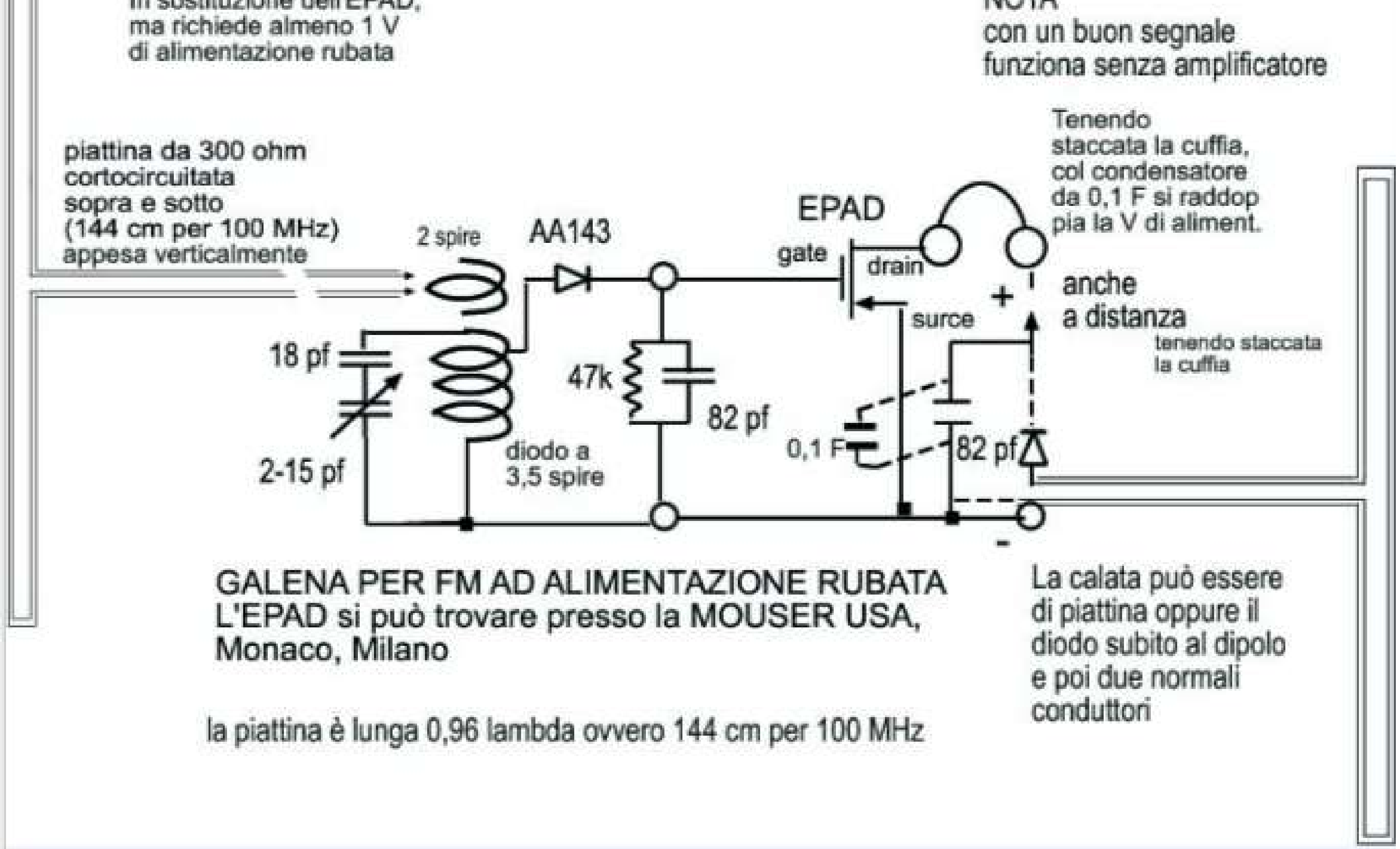


ALD110800vista dal sotto



In sostituzione dell'EPAD, ma richiede almeno 1 V di alimentazione rubata

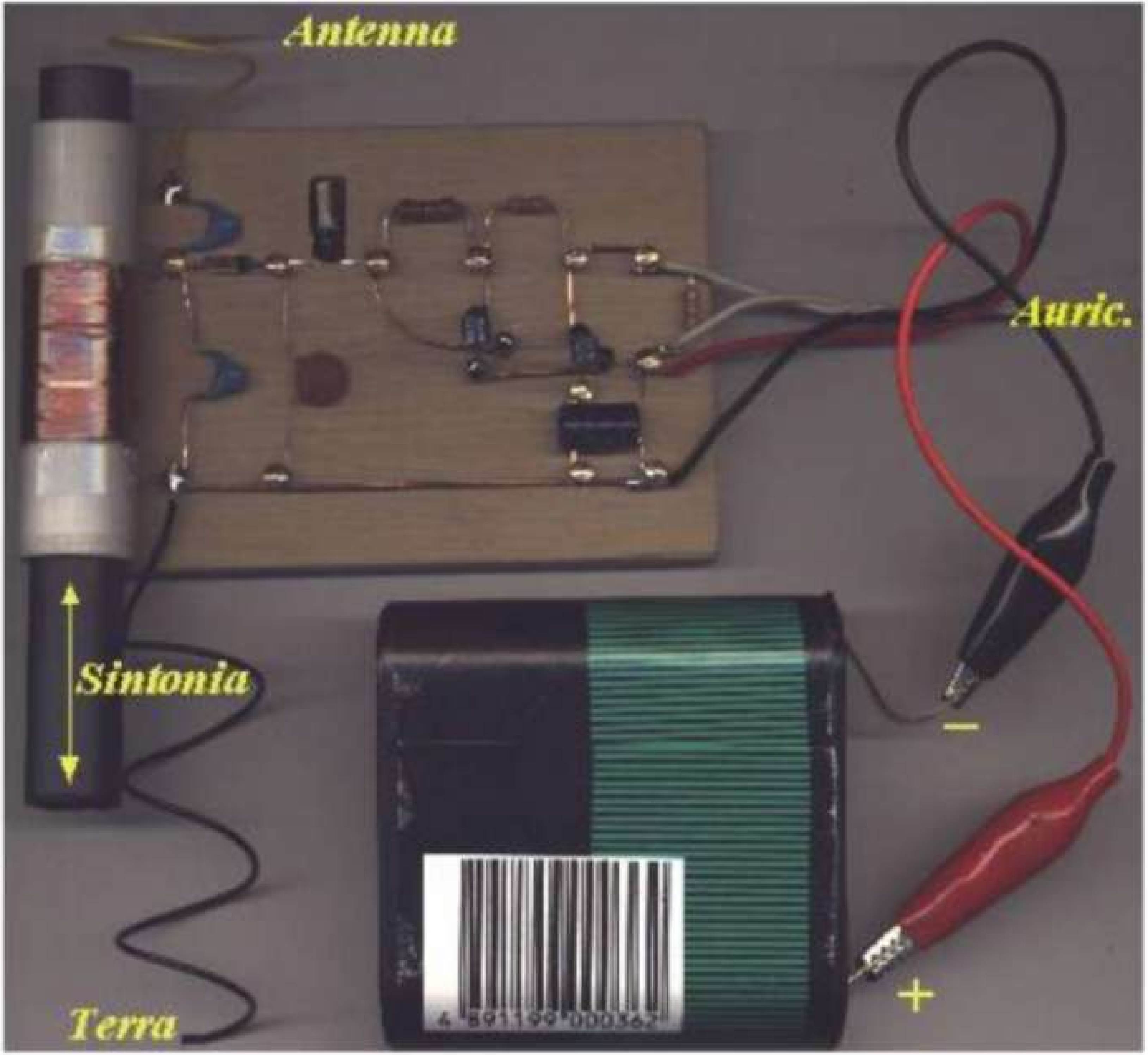
NOTA
con un buon segnale
funziona senza amplificatore



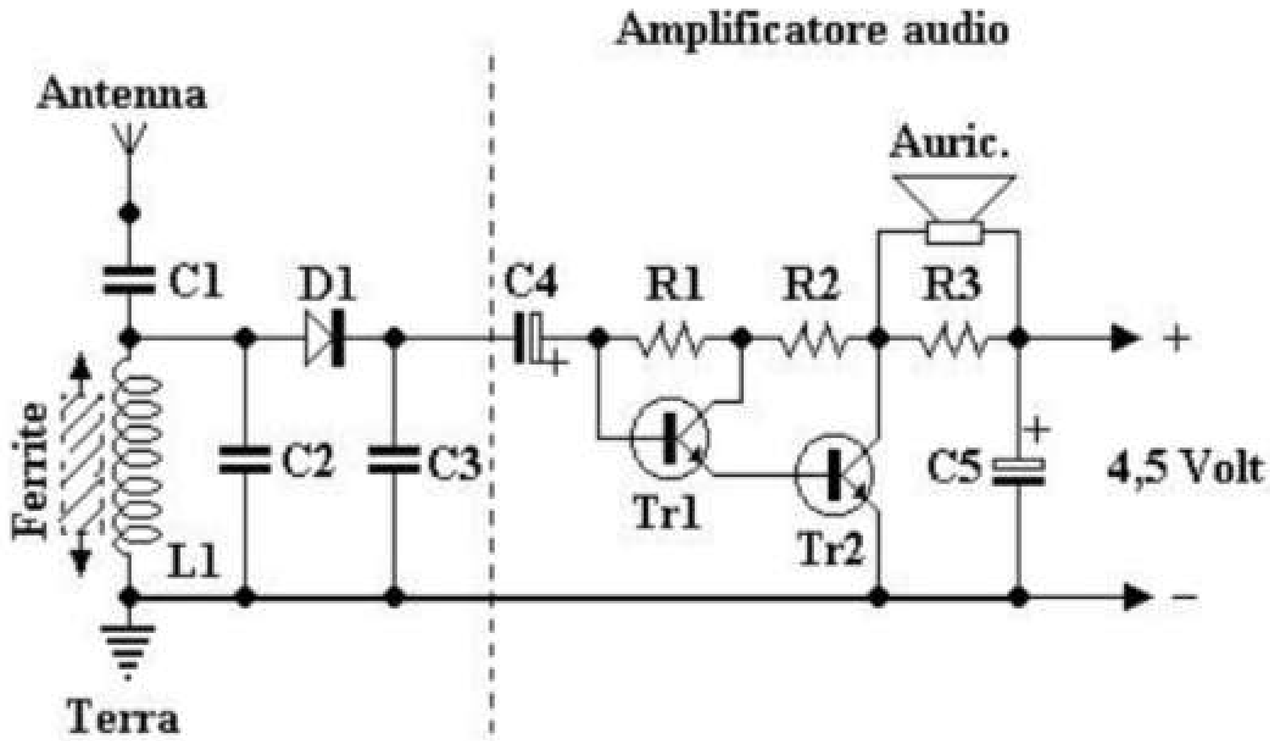
GALENA PER FM AD ALIMENTAZIONE RUBATA
L'EPAD si può trovare presso la MOUSER USA, Monaco, Milano

La calata può essere di piattina oppure il diodo subito al dipolo e poi due normali conduttori

la piattina è lunga 0,96 lambda ovvero 144 cm per 100 MHz

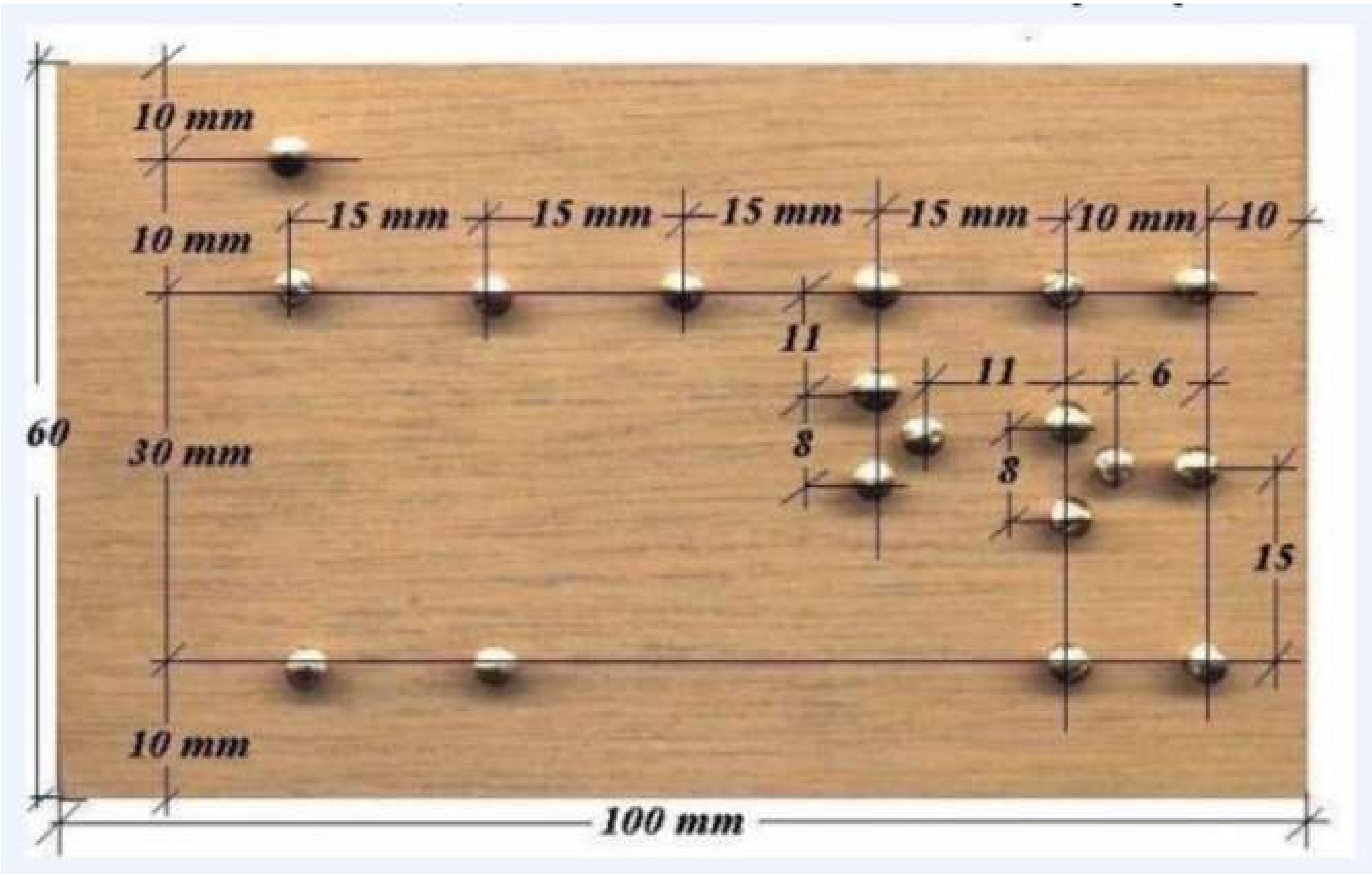

Antenna
Auric.
Sintonia
Terra
–
+

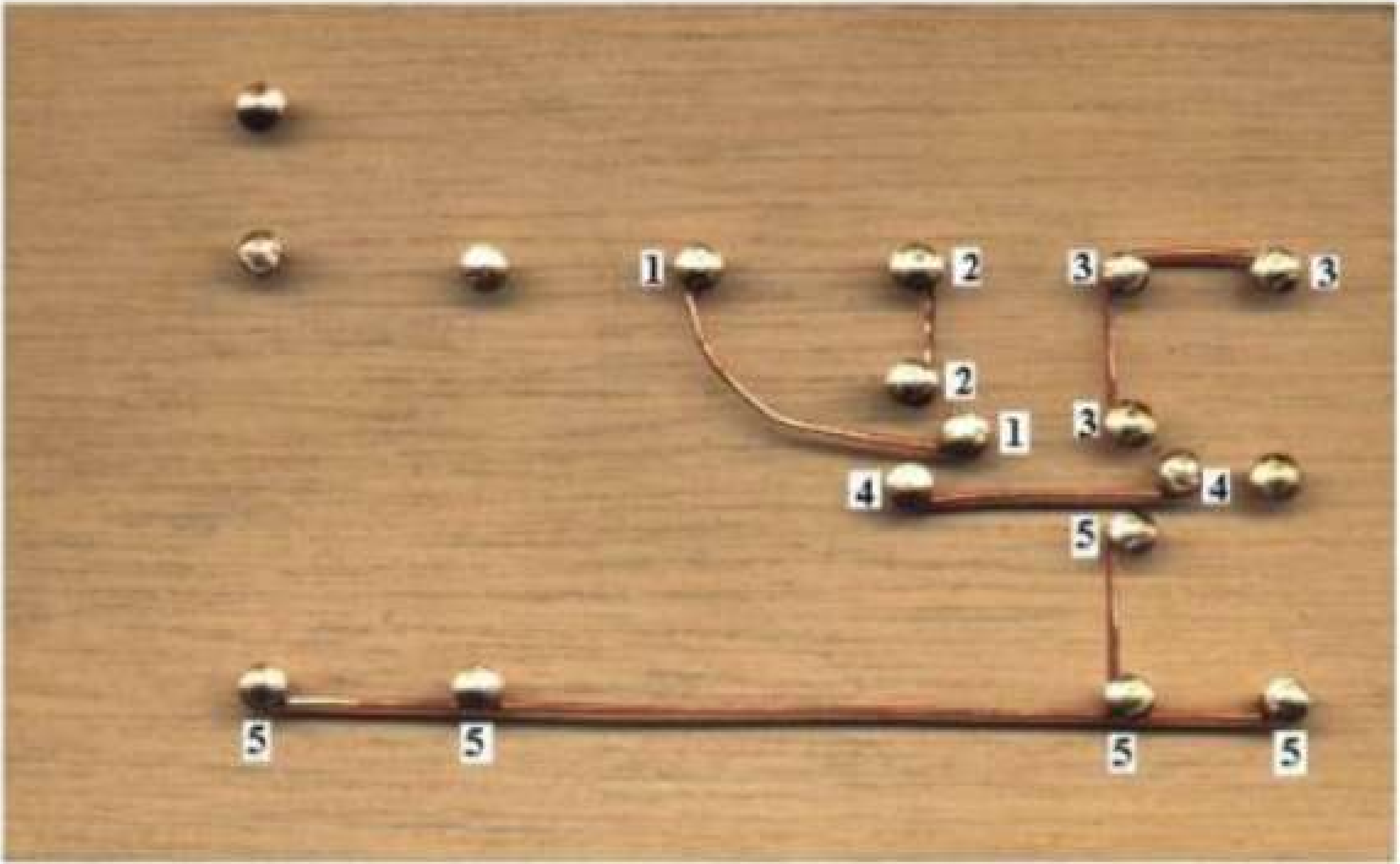
Schema elettrico



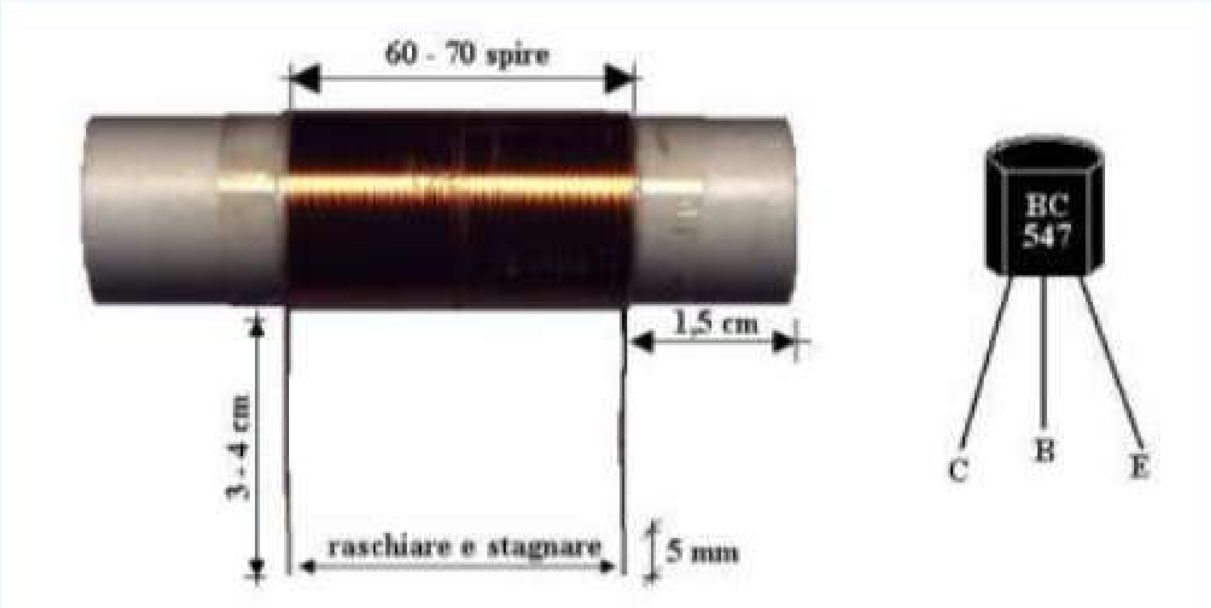
Componenti:

L1 = bobina 60/70 spire
C1 = condensatore 470 pF
C2 = condensatore 220pF
C3 = condensatore 4,7 nF
C4 = condensatore 1 uF elettr.
C5 = condensatore 47 uF elettr.
R1 = resistore 1 Mohm
R2 = resistore 4,7 Kohm
R3 = resistore 2,2 Kohm
D1 = diodo al germanio
Tr1 = transistor NPN BC547
Tr2 = transistor NPN BC547
Auricolare = Z da 100 Kohm
Ferrite = nucleo scorrevole di sintonia

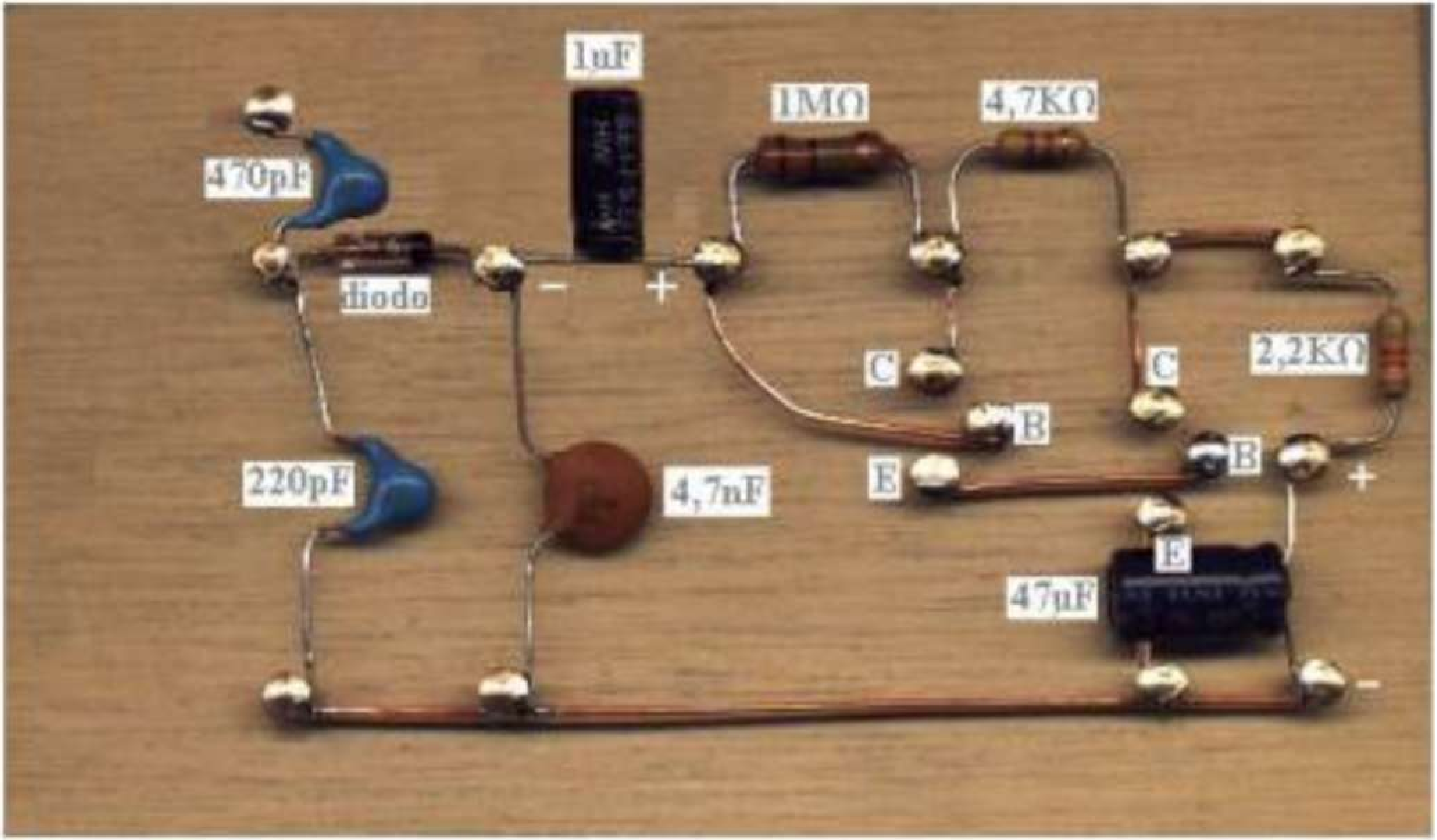

10 mm
10 mm
15 mm
15 mm
15 mm
15 mm
10 mm
10
11
11
6
8
8
60
30 mm
15
10 mm
100 mm


1
2
3
3
2
3
1
4
4
5
5
5
5
5

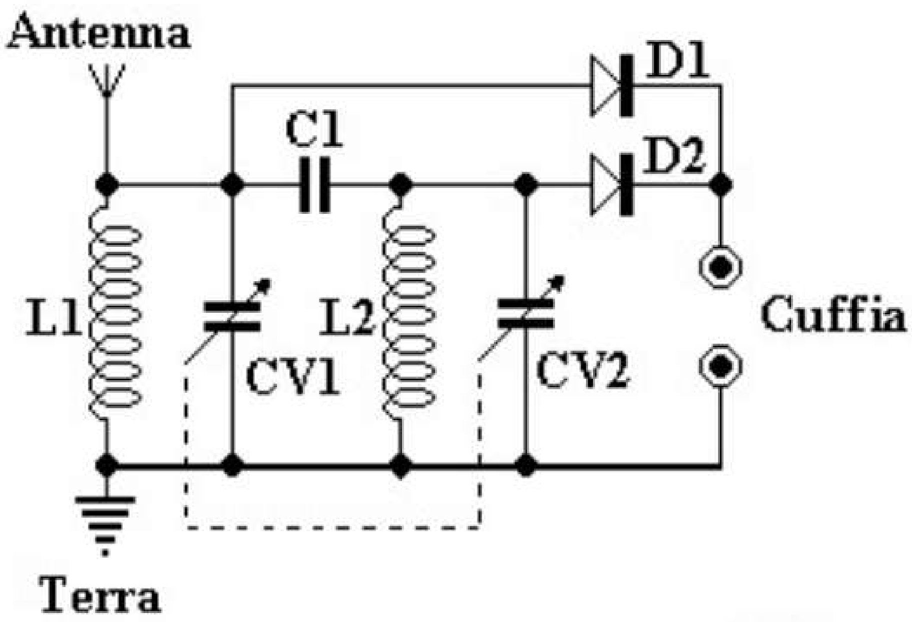
Terminato l'avvolgimento, perché questo non si svolga, sarà bene rivestirlo con un giro di nastro adesivo trasparente, i terminali vanno raschiati dallo smalto e stagnati, la bobina trova spazio sul lato sinistro della basetta e va collegata ai capi del condensatore da 220 pF, due gocce di colla saranno sufficienti a tenerla in posizione, anche la colla a caldo o il silicone sono una buona soluzione.



A questo punto si salderanno, al loro posto direttamente sulla testa dei chiodini, i due transistor (occorre fare attenzione per non sbagliare nell'identificare i terminali), i fili rosso-nero provvisti delle pinzette a coccodrillo per il collegamento alla pila, l'auricolare o la cuffia ai capi della resistenza da 2,2 Kohm, il filo d'antenna al terminale del condensatore da 470 pF, il filo per il collegamento di terra al negativo.


1nF
1MΩ
4,7KΩ
470pF
diodo
-
+
C
C
2,2KΩ
B
B
E
+
220pF
4,7nF
E
47nF
-

Un progetto di Luciano Loria



Materiale occorrente

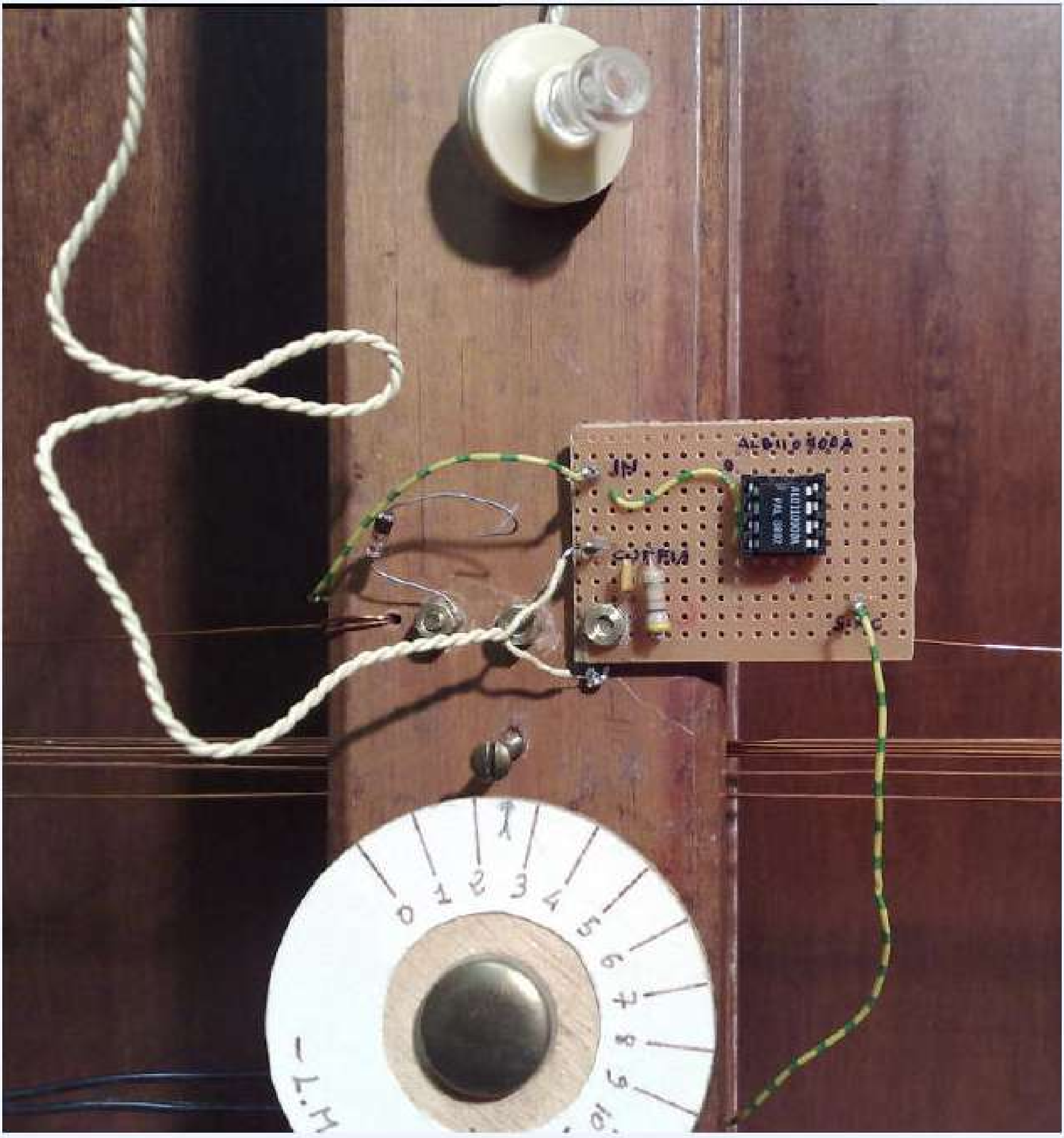
L1; L2 = 90 spire filo rame smaltato Ø 0,3 mm
su tubo isolante Ø 3 cm

CV1; CV2 = variabile in aria 350 + 350 pF

C1 = condensatore ceramico 220÷330 pF

D1; D2 = diodo al germanio (AA117)

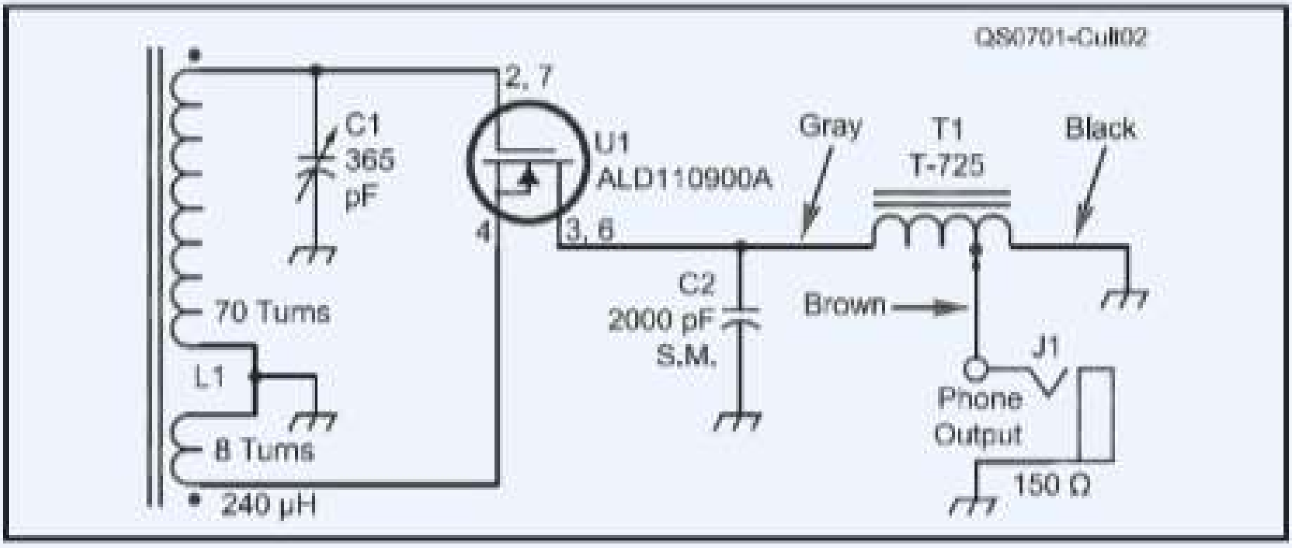
Schema elettrico



ı can see I left the existing 1N34 diode mounted, so that it can be reinserted to make compariso

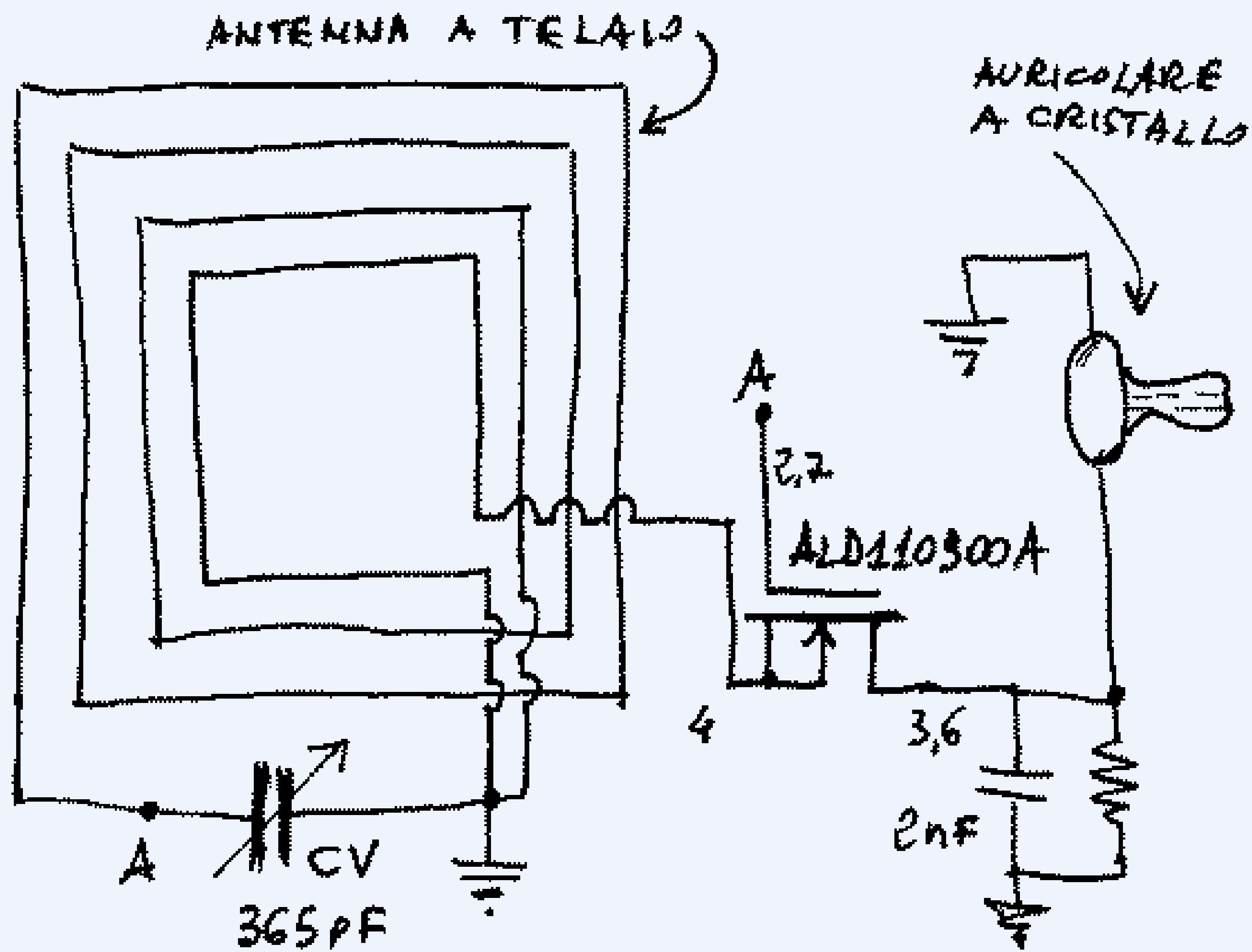
We increase sensitivity through the use of a modern zero-threshold mosfet, always without power supply

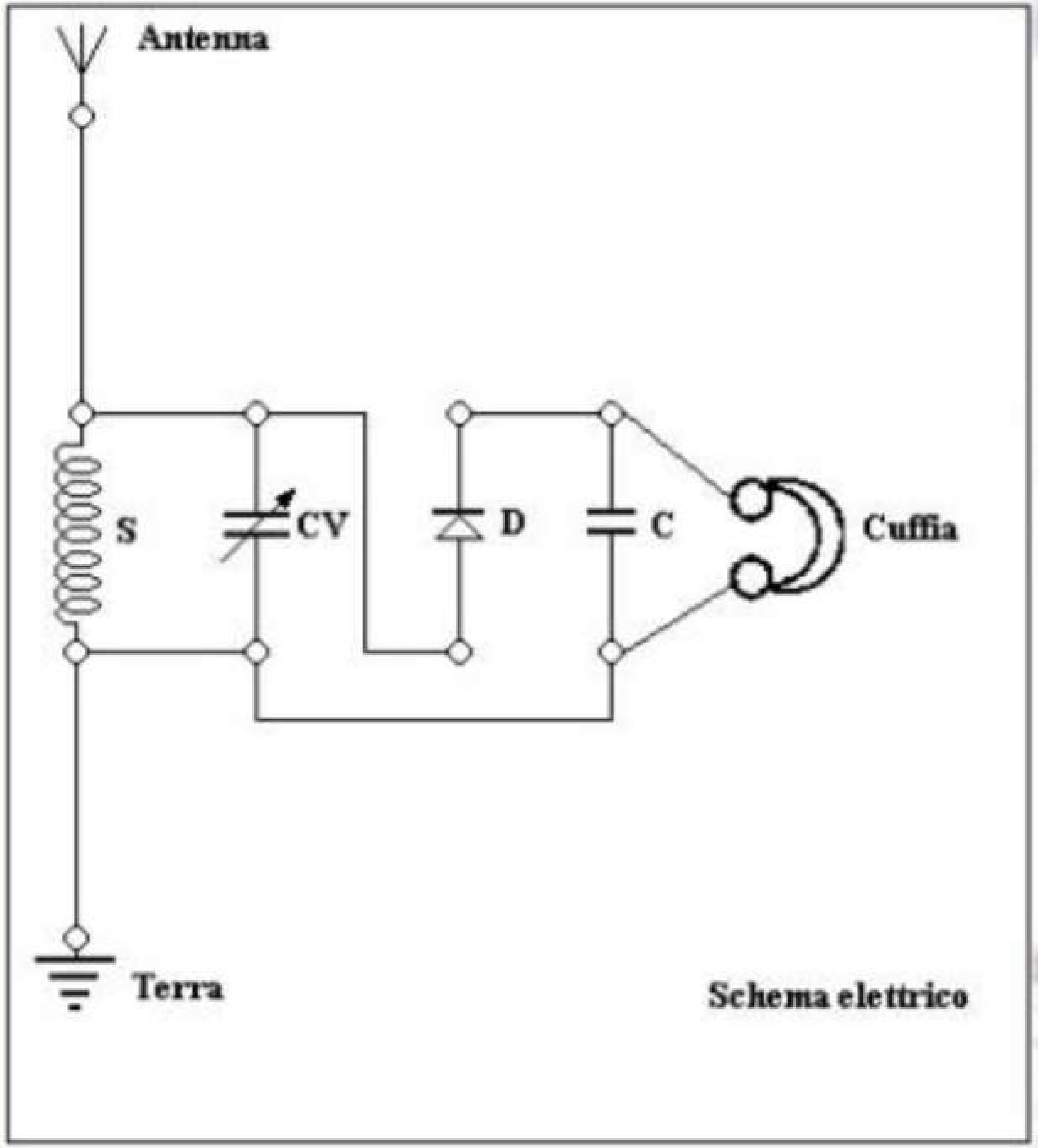
Principle of operation
From time to time, some new devices appear on the market for electronic components, suitable for experimentation in a "crystal" reception circuit. It happened a few years ago with low-fall "schottky" diodes (BAT46 etc.), which were proposed as good substitutes for old germanium diodes. Recently I have read this article by Peter Hobbs, in which a recently released device is presented, the ALD110900A , mounted in a "high sensitivity" crystal receiver. This is a double mosfet with **a conduction threshold equal to zero**, ideal for detecting without loss a very weak signal like the one that is formed in a crystal receiver. The author proposes the realization of a scheme similar to the following one, which turns out to be of the synchronous detection type.

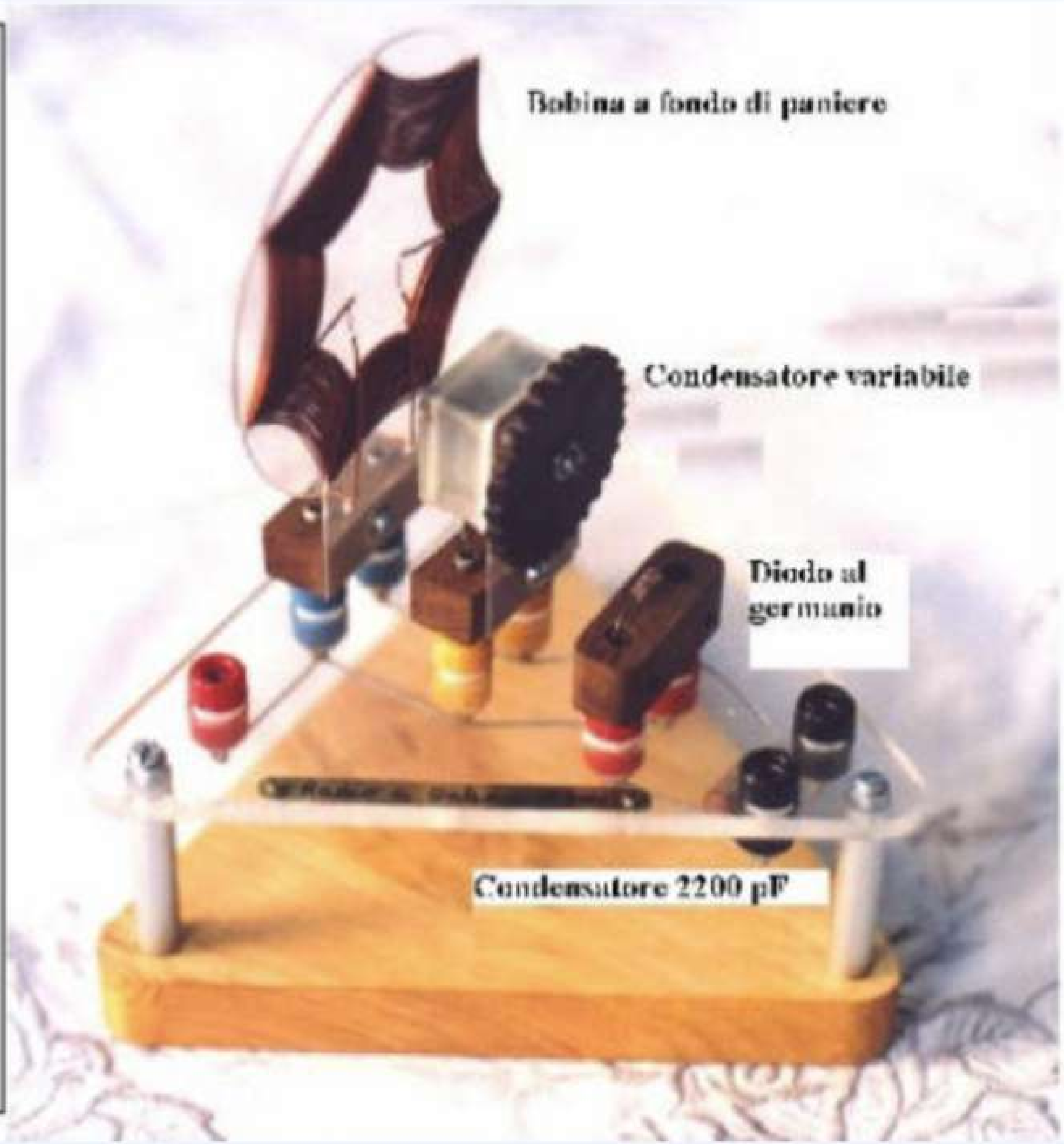


According to the author, the sensitivity is so high as to allow the realization of a receiver without an external antenna, based on the use of only the ferrite antenna, like that of transistor receivers. Its scheme uses as a transducer a telephone capsule coupled to the receiver by an adaptation transformer (this solution deserves to be better investigated).

For the tests I used my receiver with a panel antenna , experimented with great satisfaction a few years ago. To adapt the reception circuit I had to make some small changes, obtaining a scheme like the one below:

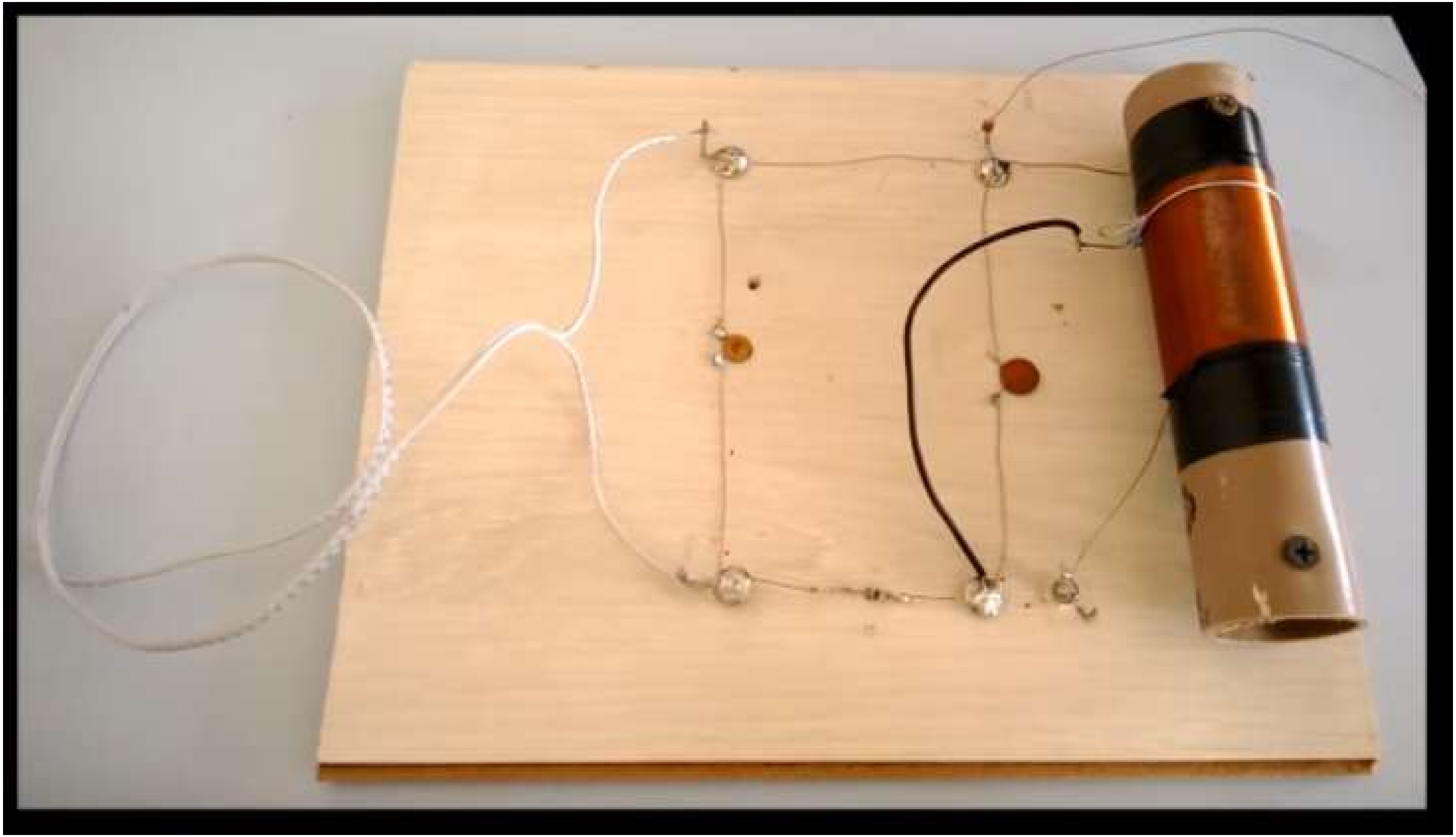


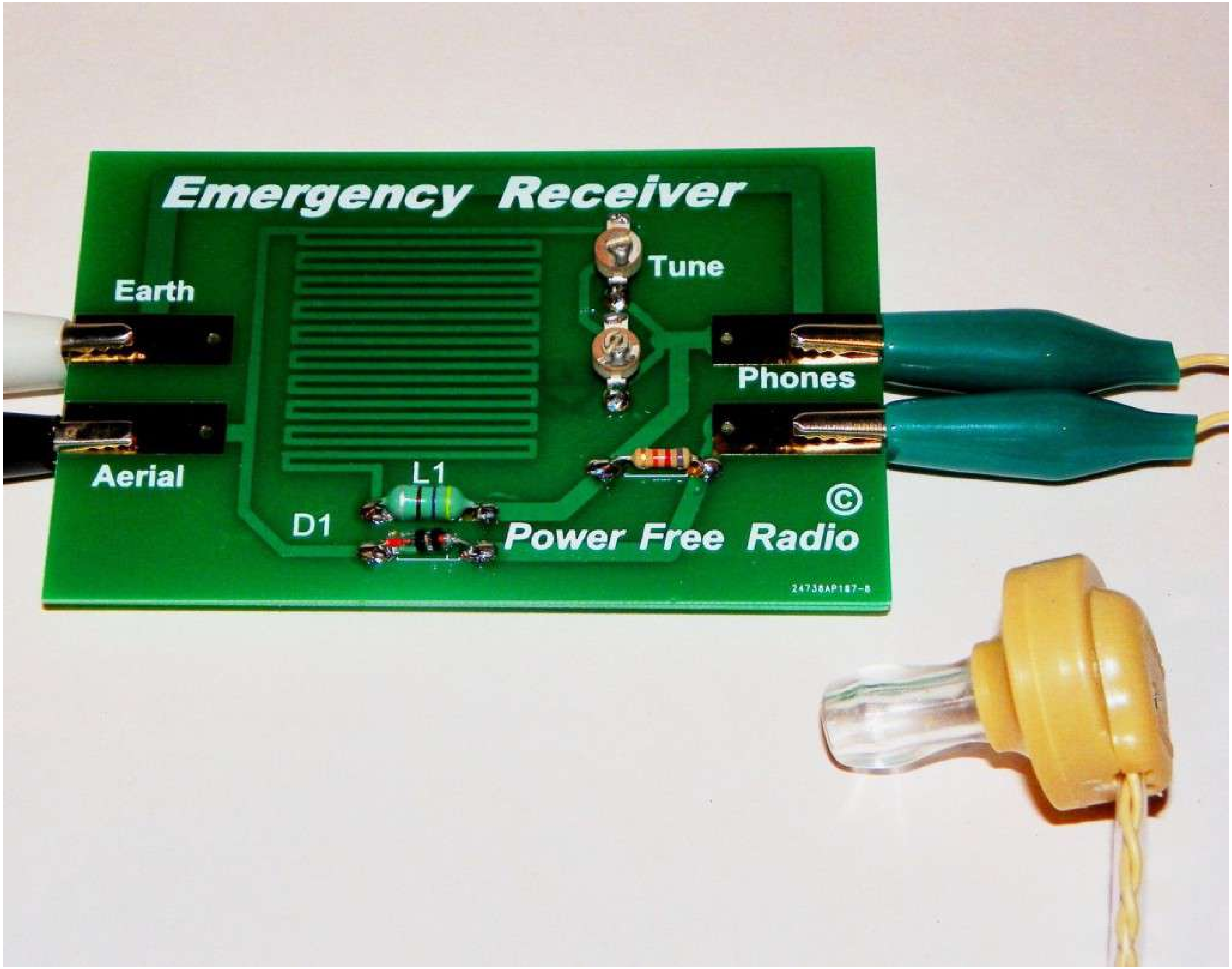

Antenna
S
CV
D
C
Cuffia
Terra
Schema elettrico

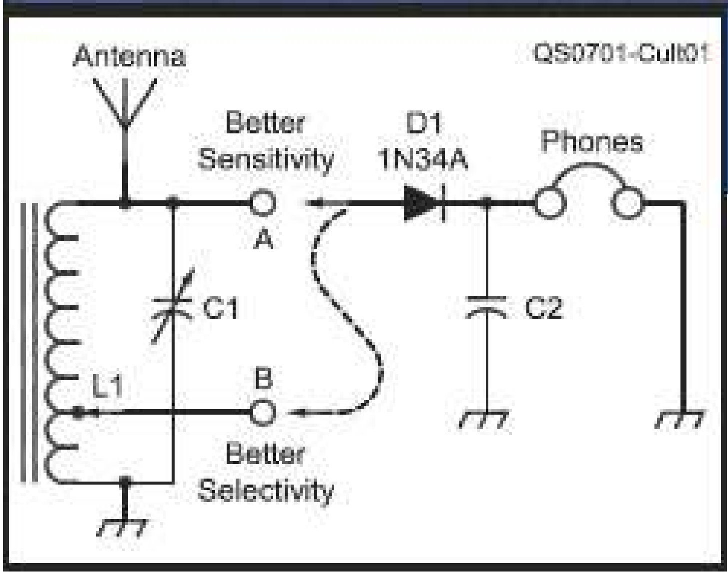

Bobina a fondo di paniere
Condensatore variabile
Diodo al germanio
Condensatore 2200 pF

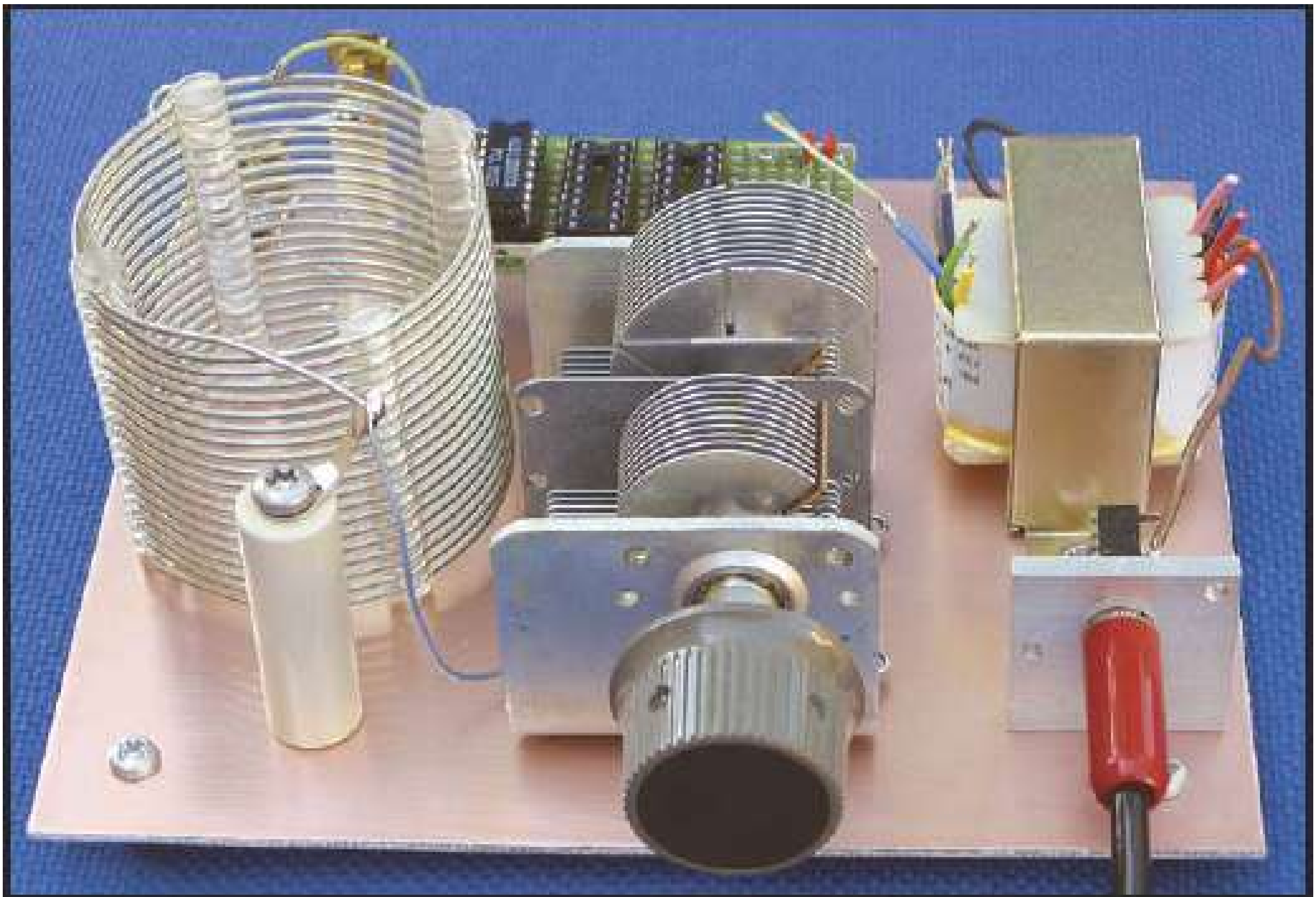

DIODO 1N270
INDUTOR
WWW.RADIODX.QSL.BR

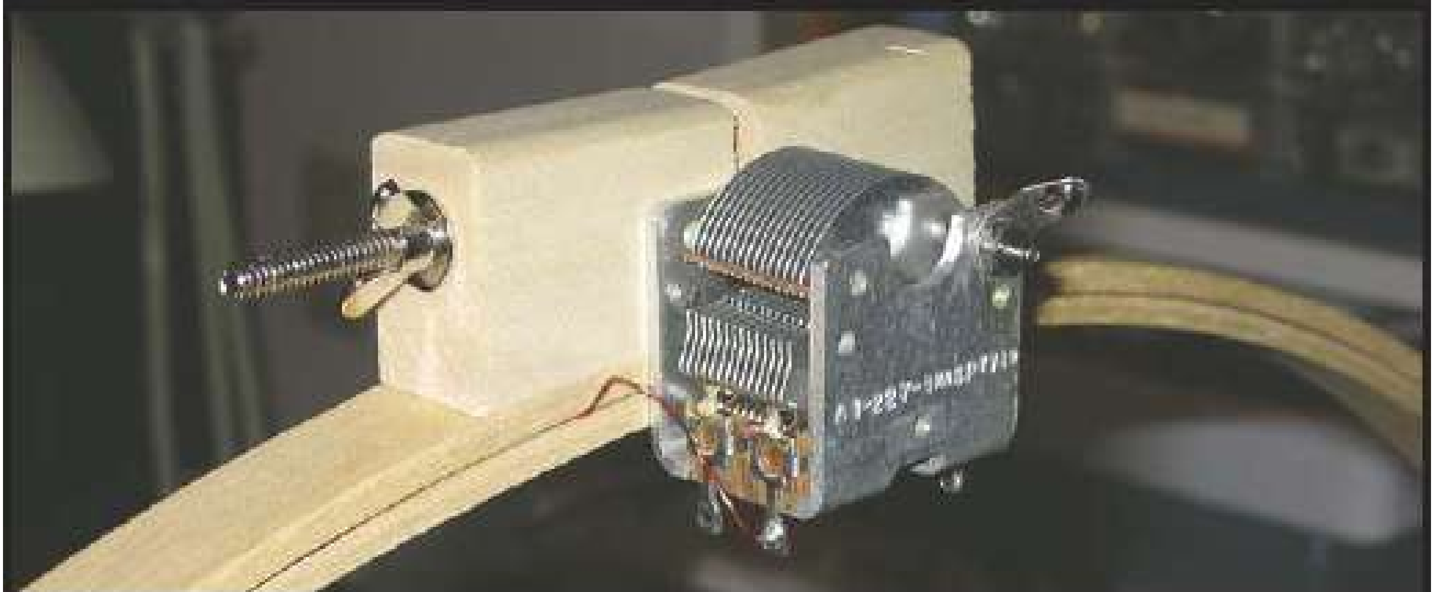

Fone Cristal
DIODO
WWW.RADIODX.QSL.B

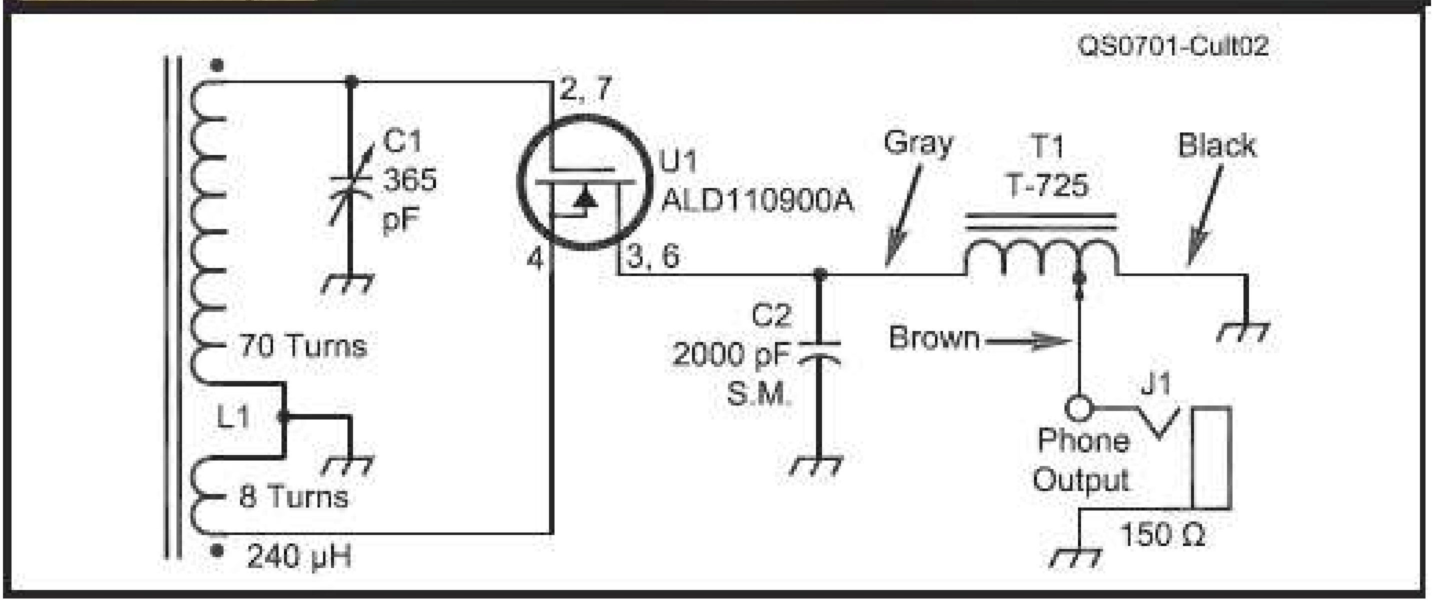


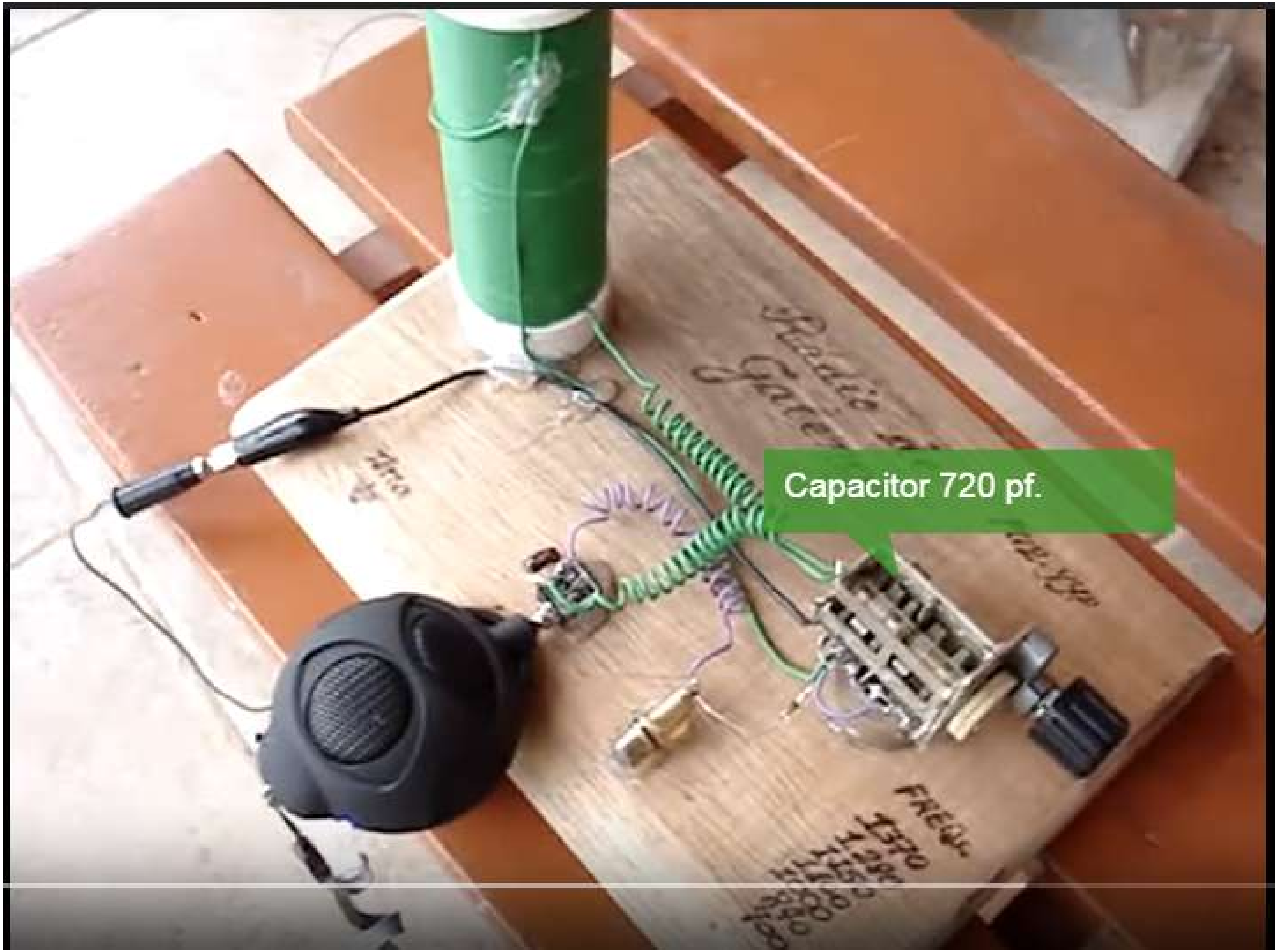

Emergency Receiver
Tune
Earth
Phones
Aerial
L1
D1
©
Power Free Radio
24738AP187-8

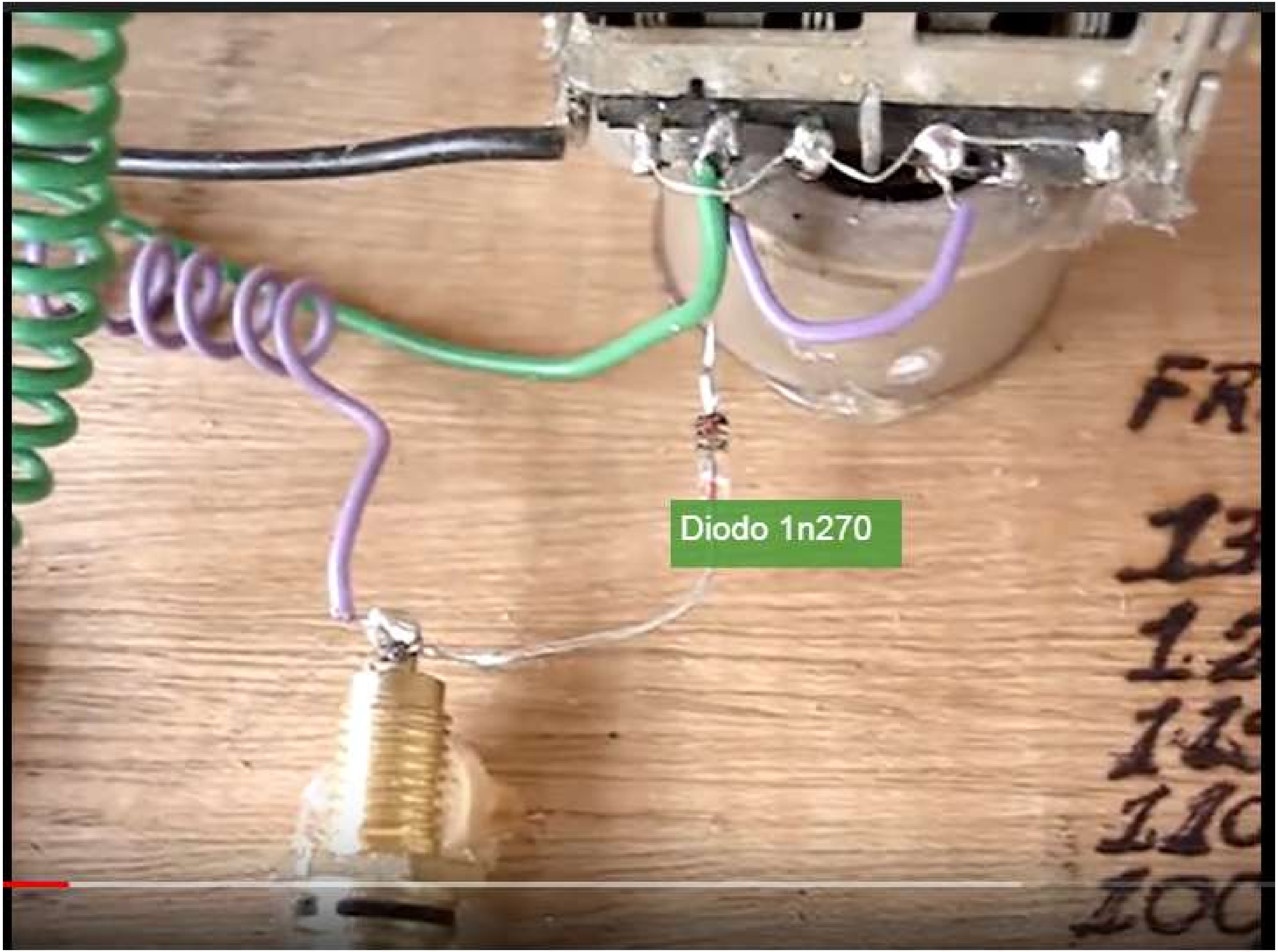

QS0701-Cult01
Antenna
Better
Sensitivity
D1
1N34A
Phones
A
C1
C2
L1
B
Better
Selectivity





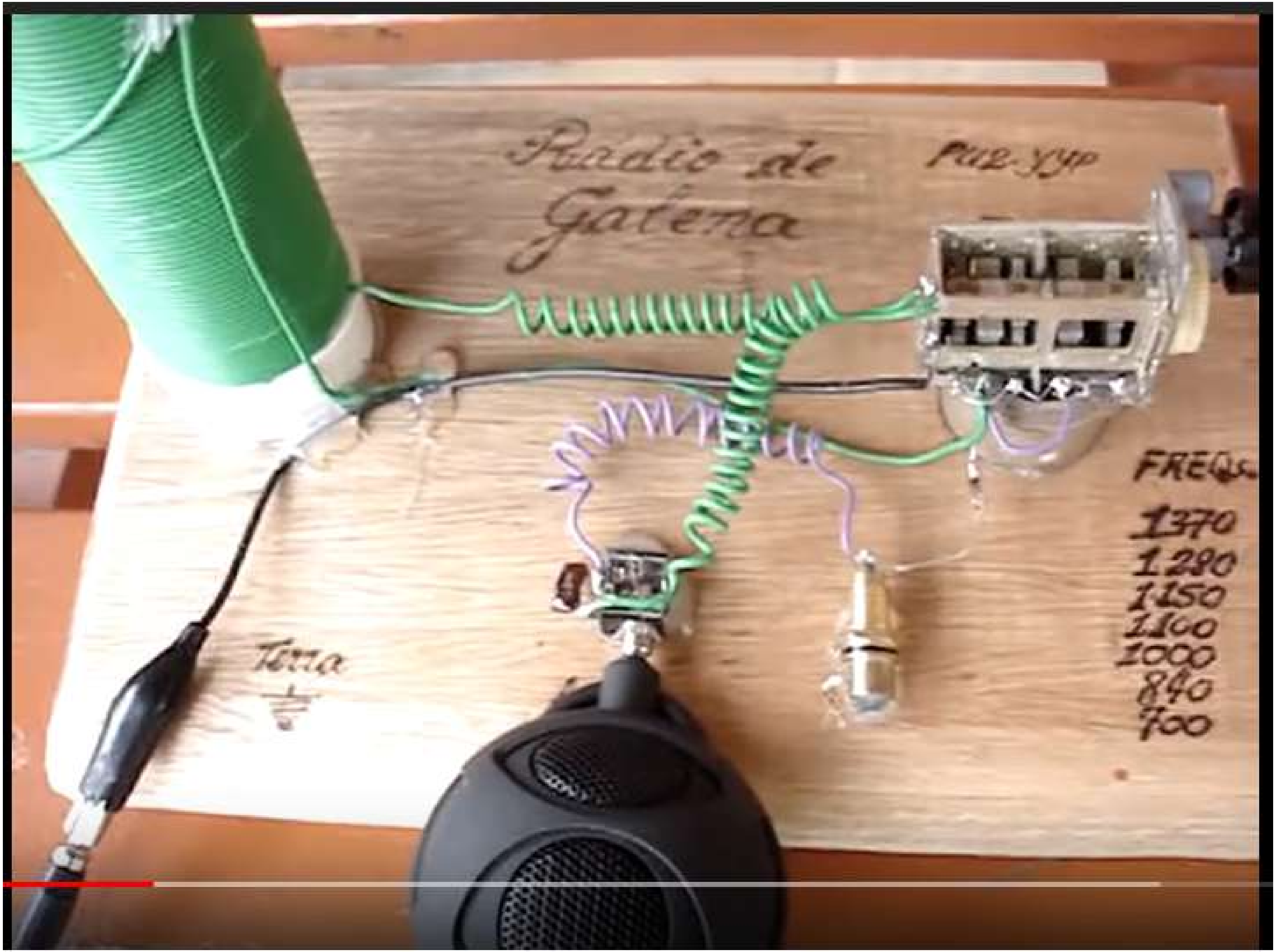

QS0701-Cult02
C1
365
pF
2, 7
U1
ALD110900A
4
3, 6
Gray
T1
T-725
Black
C2
2000 pF
S.M.
Brown
J1
Phone
Output
150 Ω
70 Turns
L1
8 Turns
240 µH


Capacitor 720 pf.

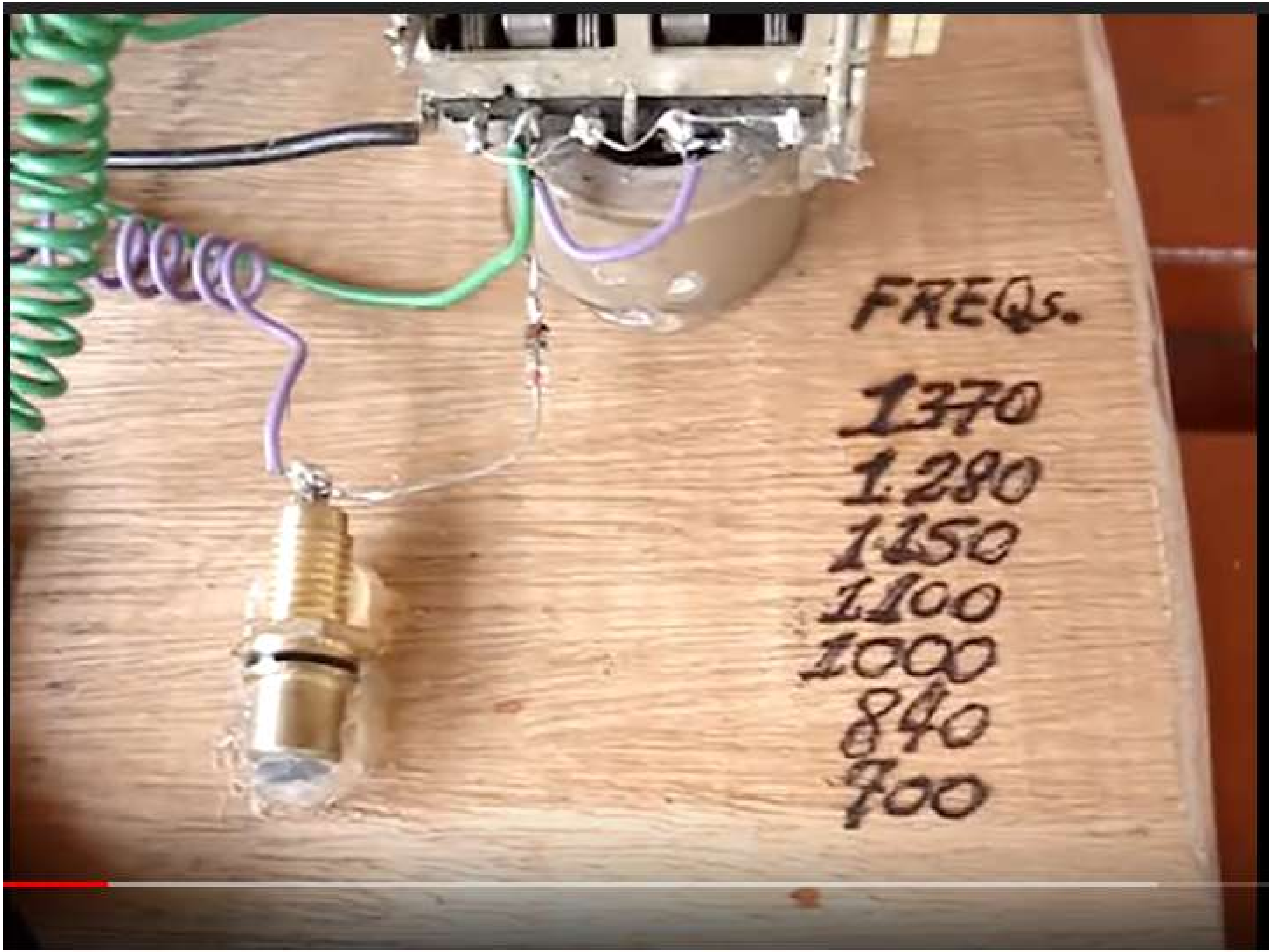

Diodo 1n270


Terra

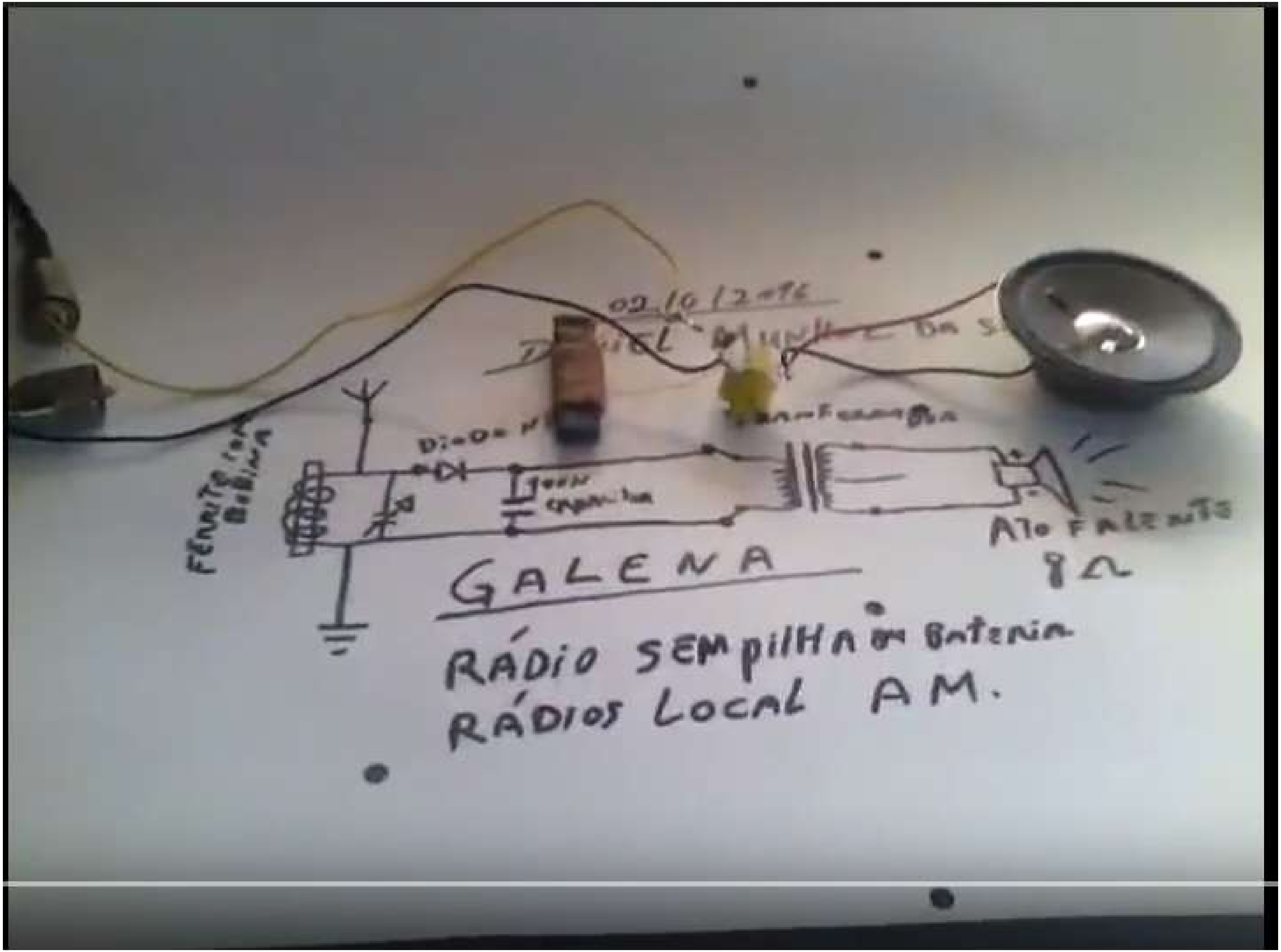

Radio de
Galena


Radio de Galena
1370
1280
1150
1100
1000
840
700
Terra

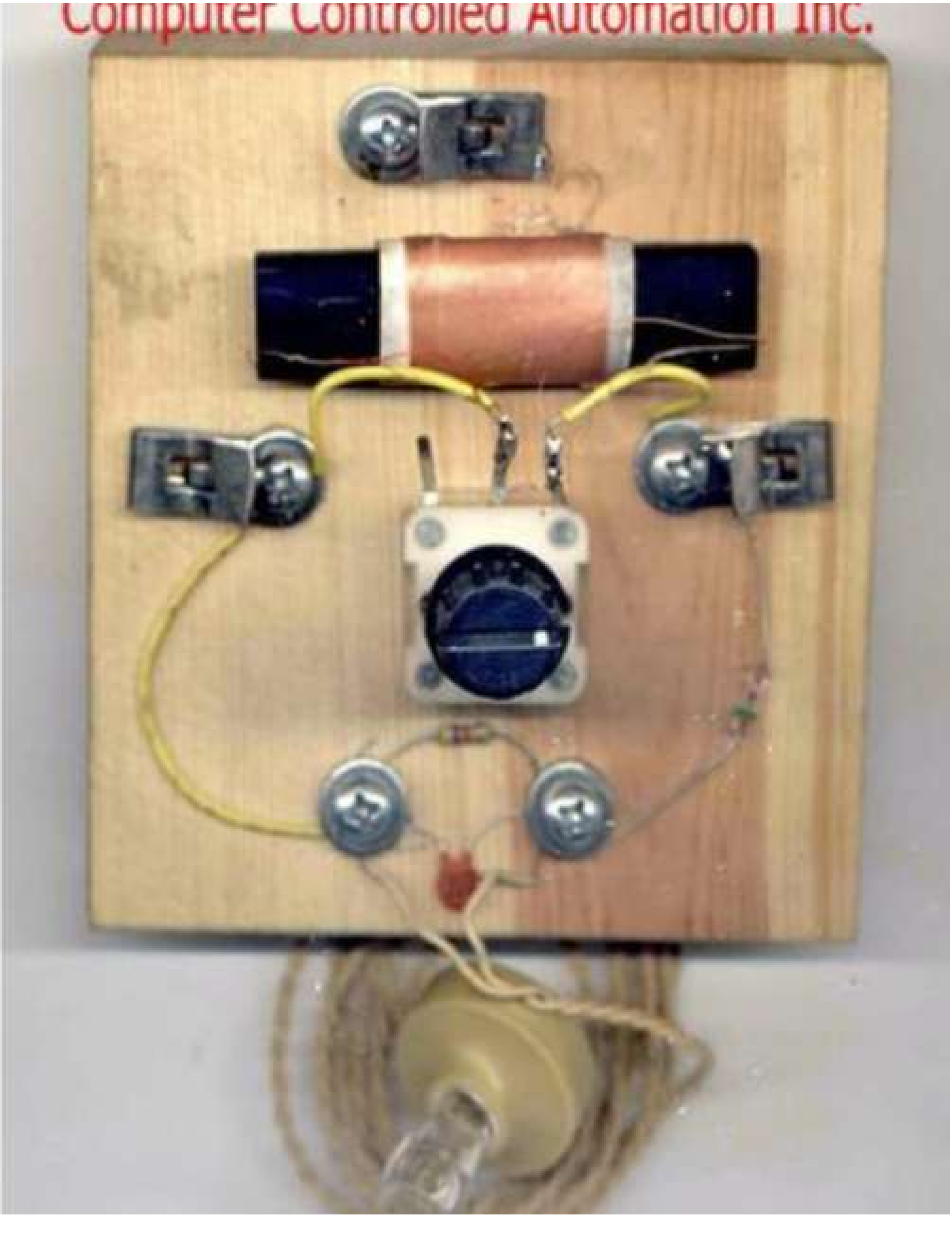

FREQs
1370
1280
1150
1100
1000
840
700


FREQs.
1370
1280
1150
1100
1000
840
700


02/6/2016
DANiEL MUNHOZ
DioDo
100N

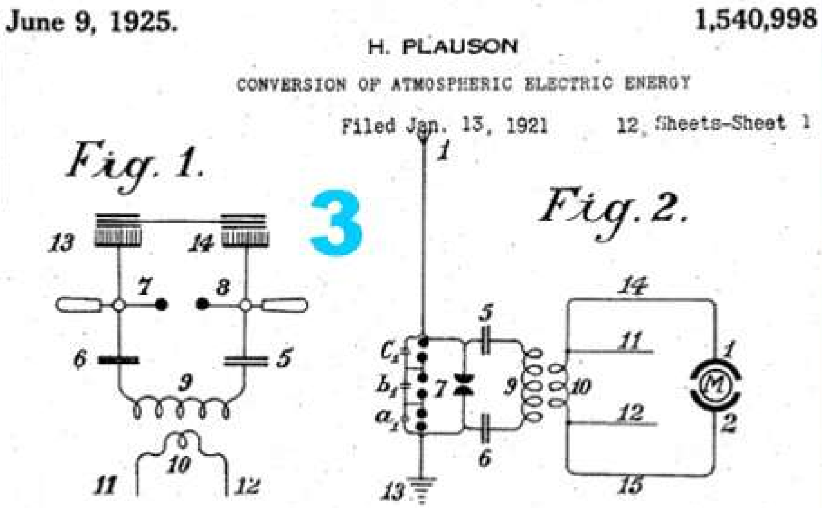

GALENA
RÁDIO SEM pilHA ou Bateria
RÁDIOS LOCAL AM.
FERRITE com BOBINA
8Ω

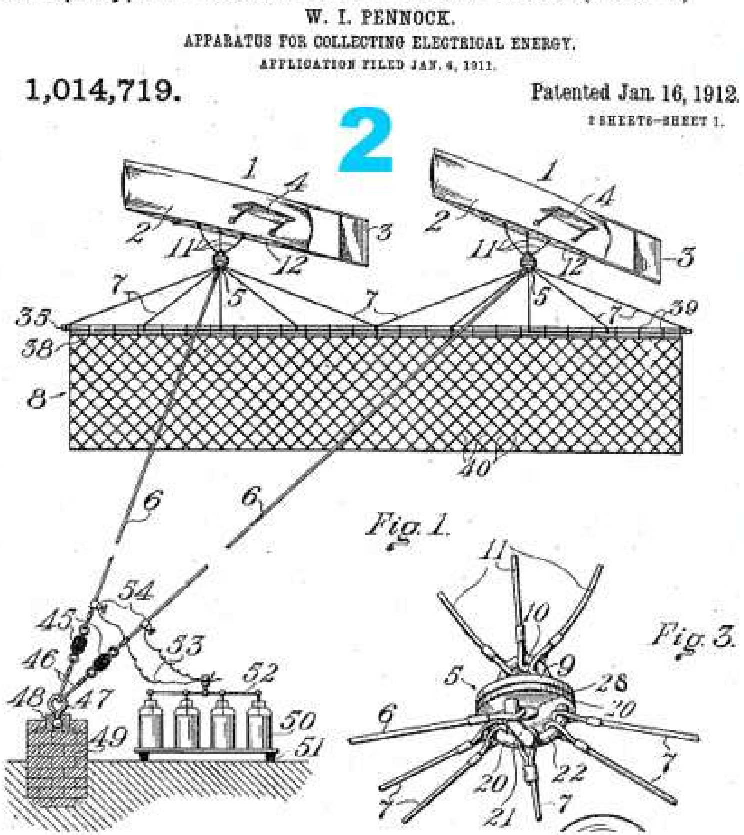

02/6/2016
MUNHOZ DA S
DIODO
100N
GALENA
ATO FA
8Ω

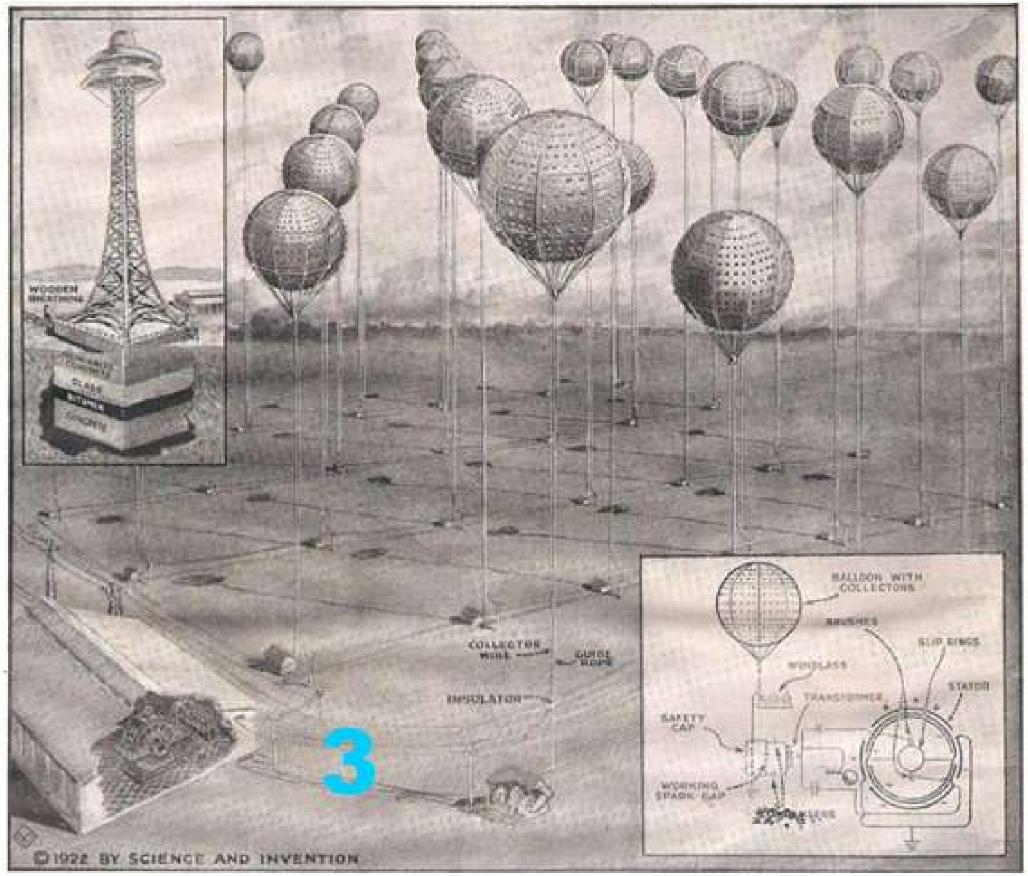

Computer Controlled Automation Inc.

1. Mahlon Lumis (США) уже в середине XIX века применил пламенные ионизаторы для питания атмосферным электричеством телеграфной связи в Западной Вирджинии
2. Walter Pennock (США) предложил систему для собирания атмосферного заряда на сетки, подвешенные к аэростатам из металлизированной ткани. Энергия накапливалась в лейденских банках
3. Herman Plauson (Германия) впервые предложил полную систему для получения и преобразования атмосферного электричества в энергию обычного стандарта. Электрический заряд, накапливаемый поверхностью приемников, с помощью инвертора превращался в ток промышленного стандарта. Мощность опытных установок от 0,72 до 3,4 кВт.
4. Современная установка для питания от атмосферного электричества метеорологической аппаратуры. Россия. Патент RU 2245606 (2003 г.)

Methods Suggested by Loomis for the Harnessing of Electricity from the Atmosphere







(A) comprises of an electronic data storage unit and pulse generator in one unit. The monostatic 1.5 GHz antenna (B) is encased within a broom-like device (C), which includes a survey wheel essential for horizontal spatial control. The monitor display (D) allows for on-site cursory analysis. A hundred foot cable (E) attaches the antenna to the control unit. A direct current (DC) power conversion unit (F) may also be necessary if the power source originates from a 110-volt alternating current source. More recent radar systems are now available that are more compact for field portability.

Figure 1 – Ground Penetrating Radar System Components

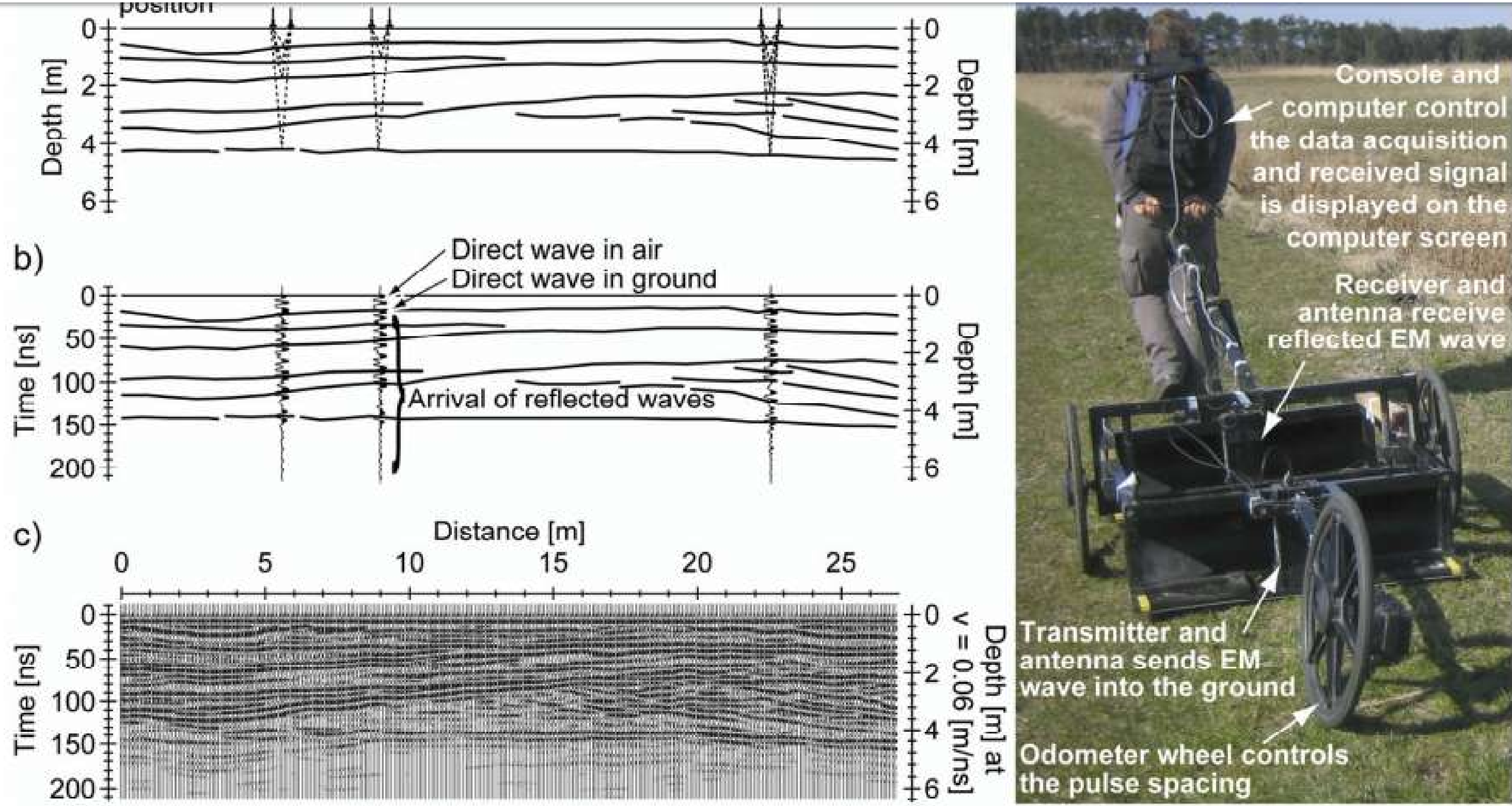


Fig. 4.7.1: Principles of GPR in reflection profiling mode. a) In reflection profiling a set of transmitting antenna and receiving antenna with constant separation is moved along the profile. The path of some of the reflected waves is sketched for antenna position 56, 91 and 226 of the GPR profile in (c). b) The received signal of these antenna positions is displayed in wiggle mode. c) GPR profile acquired with 200 MHz system in a coastal environment. The horizontal axis displays the distance along the profile. The vertical axis to the left displays the two-way travel time and the axis to the right displays the converted depth. d) Photo of a GPR system equipped with 100 MHz antenna. The text on the photo explains the different part of the system.

Fig. 4.7.2: Principles of GPR in CMP mode. a) In CMP mode a set of a transmitting antenna (Tx) and a receiving antenna (Rx) are moved away from each other. The six first antenna positions are shown with the path of the reflected wave from the first reflector. b) Sketch of the path of the most common waves that is present in a CMP. c) Diagram of the received signals in a CMP. The horizontal axis displays the distance between the transmitting and the receiving antenna. The vertical axis displays the two-way travel time. d) Photo of a GPR system that is ready for a CMP sounding.

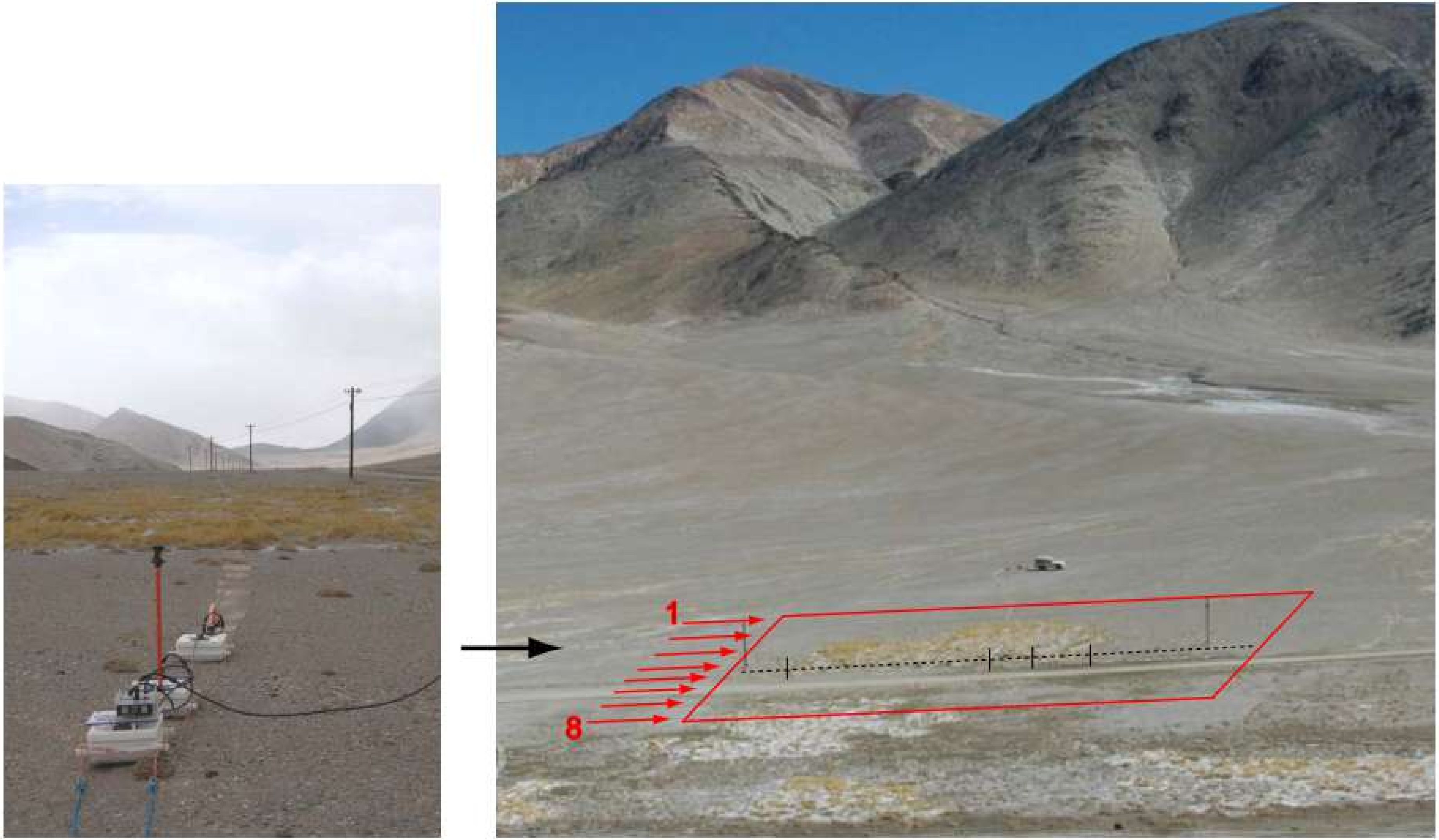
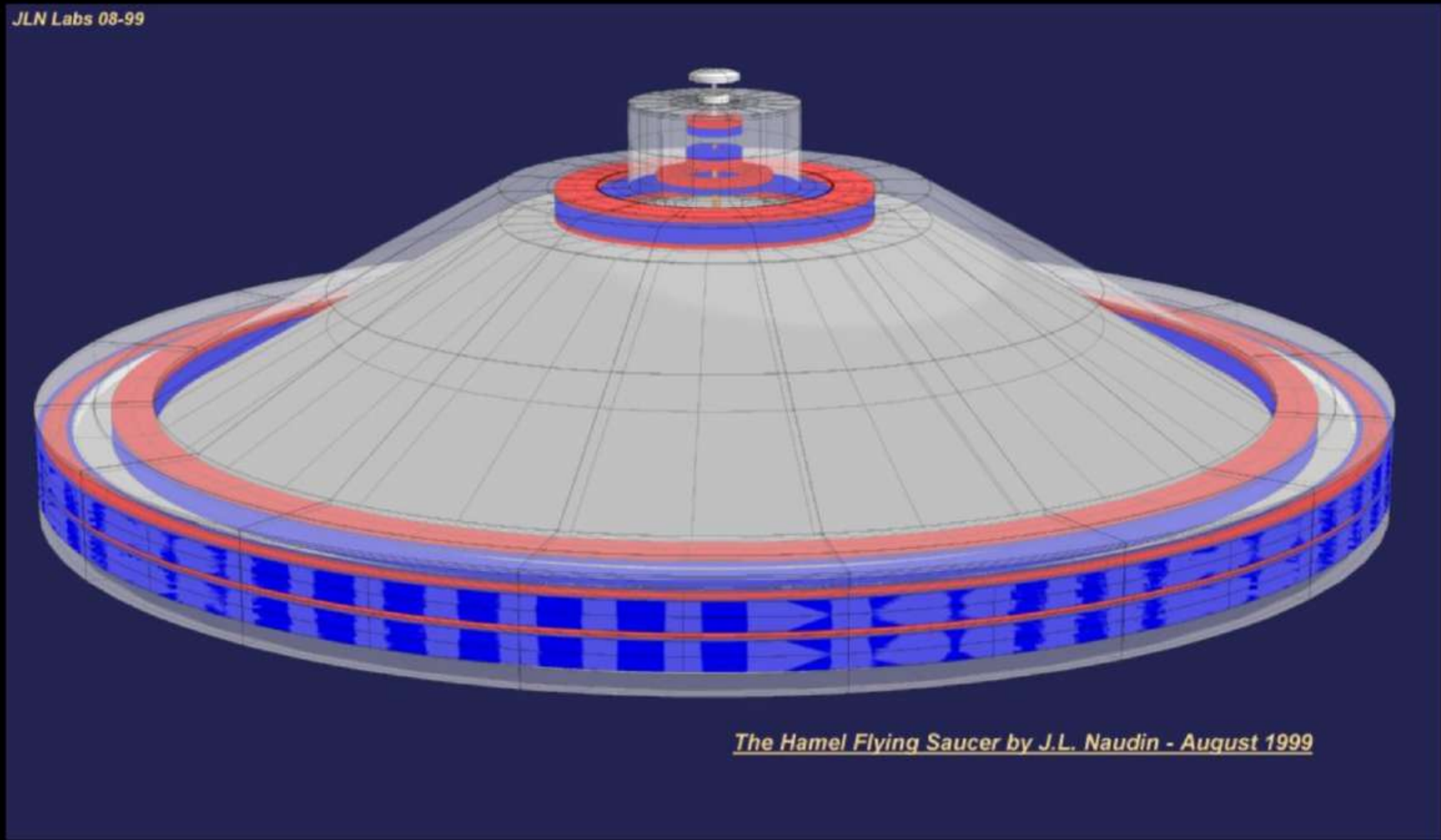


Fig. 2. Photographs of the study area: GPR measurements were acquired at the foot of an alluvial fan, partly across bare soil, a small vegetated area and the roadbed of the Xinjiang-Tibet Highway (red box; arrows indicate the direction of GPR lines as shown in Fig. 4; thin dashed line: transect discussed in Sect. 4.1, Figs. 4 to 6, transitions between vegetated and non-vegetated areas are marked separately). A detailed photograph of the vegetated area and the adjacent bare soil is provided on the left photograph, the black arrow indicates the location and viewing direction of the photograph at the left.



The David Hamel's Pictures Album

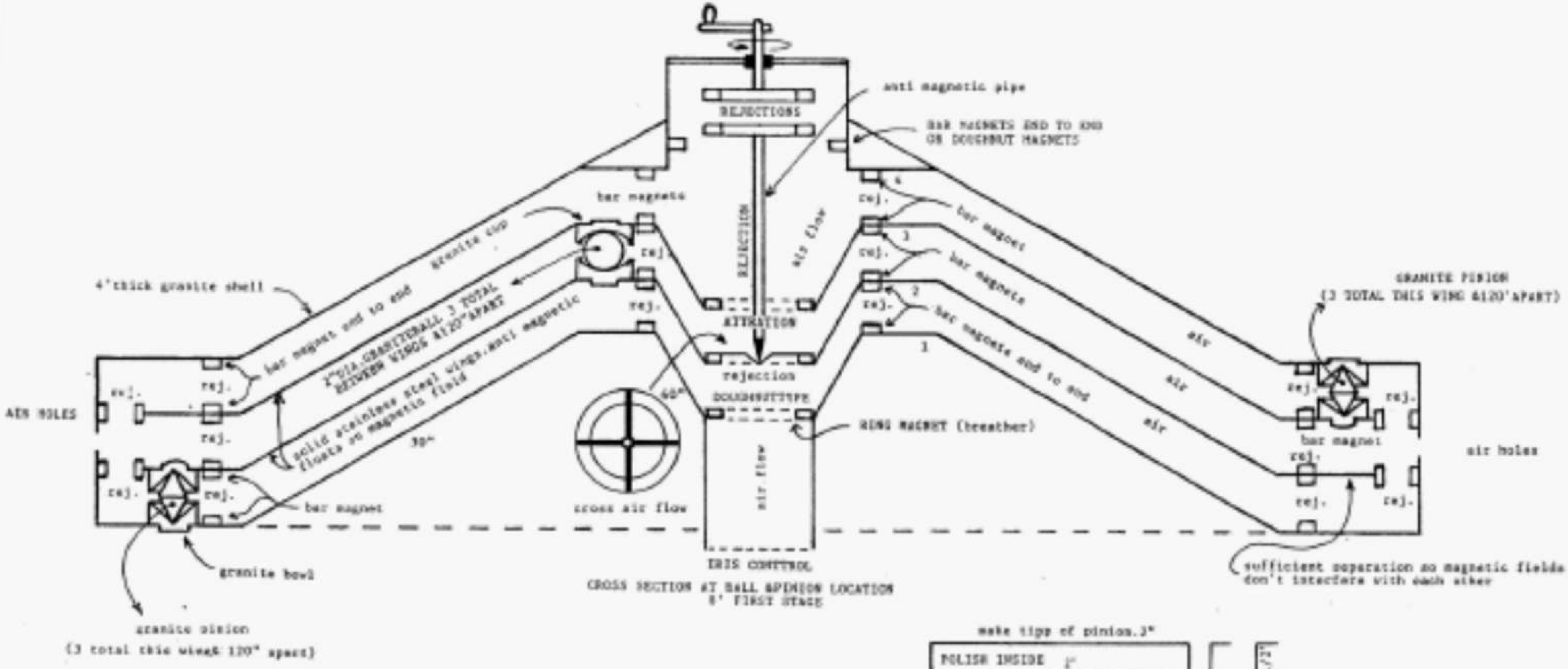
Courtesy of **Tracy** from the ***Hamel's Teamwork***

created on September 18th, 1999 - ***JLN Labs*** *- Last update September 21th, 1999*

The Hamel's Flying Saucer (HFS) under construction

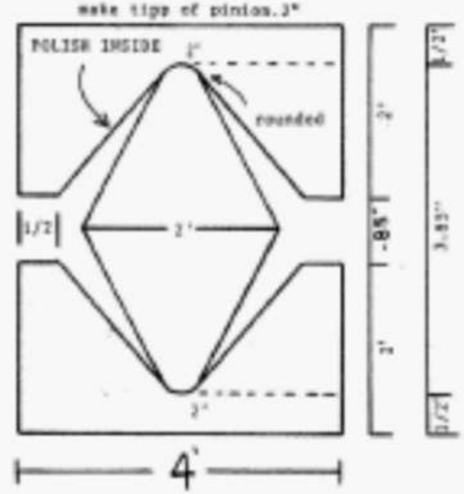
GRAVITOMAGNETIC DRIVE

SCREW HANDLE TO PUSH MAGNET INTO REJECTION



CROSS SECTION AT BALL &PINION LOCATION
8' FIRST STAGE

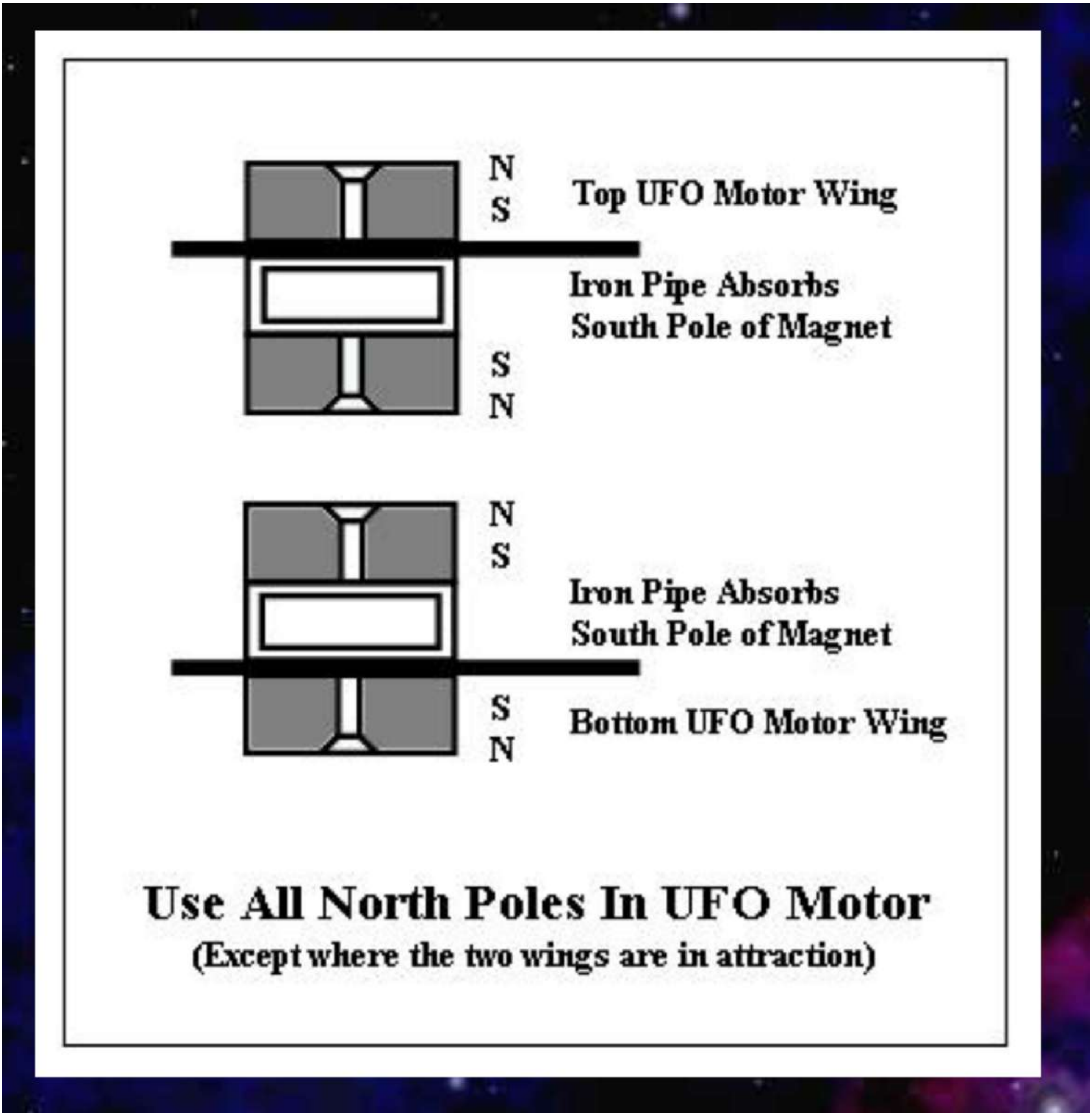
make tips of pinion.3"

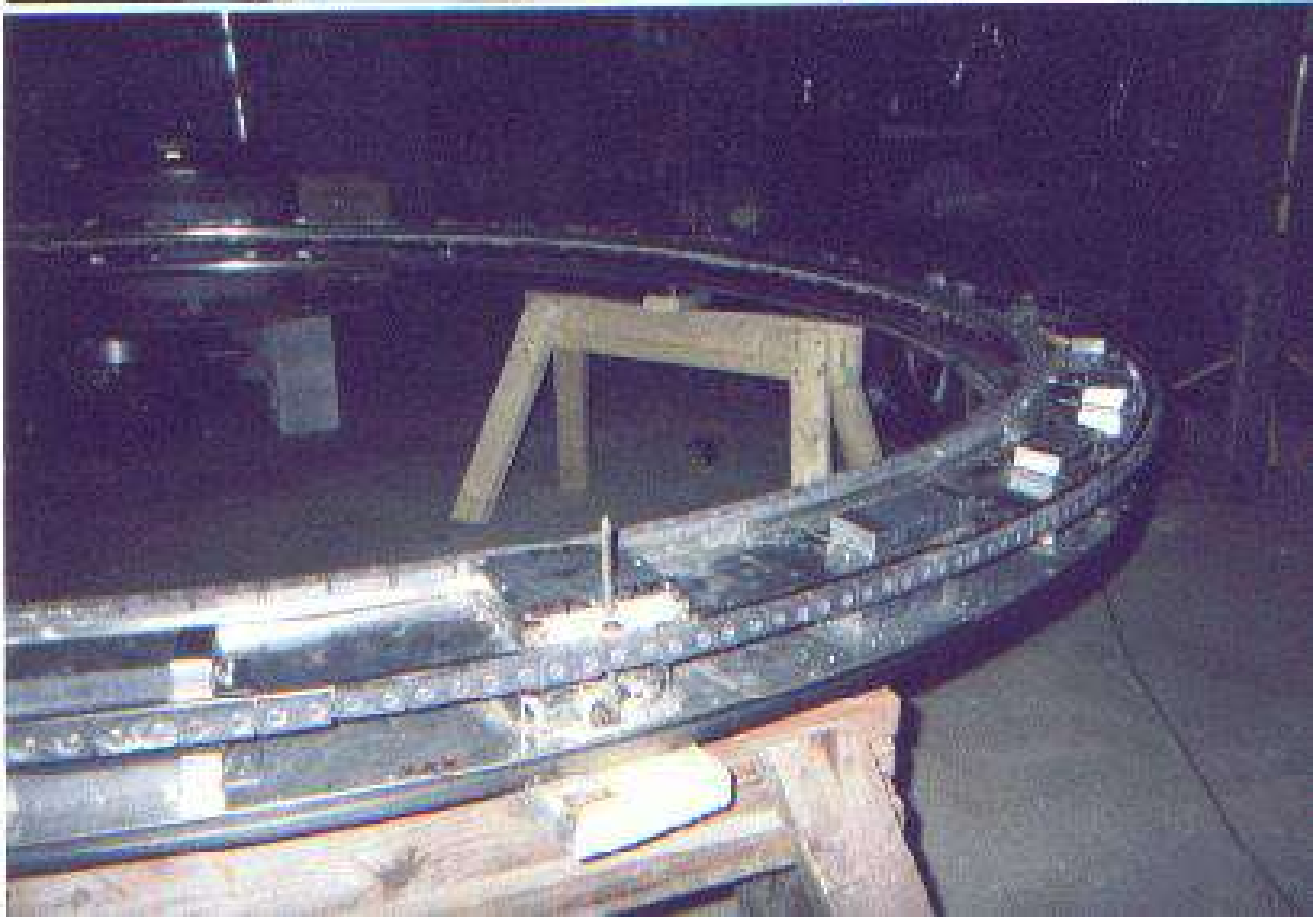


·REVERSE ORDER FOR INSIDE CONTROL

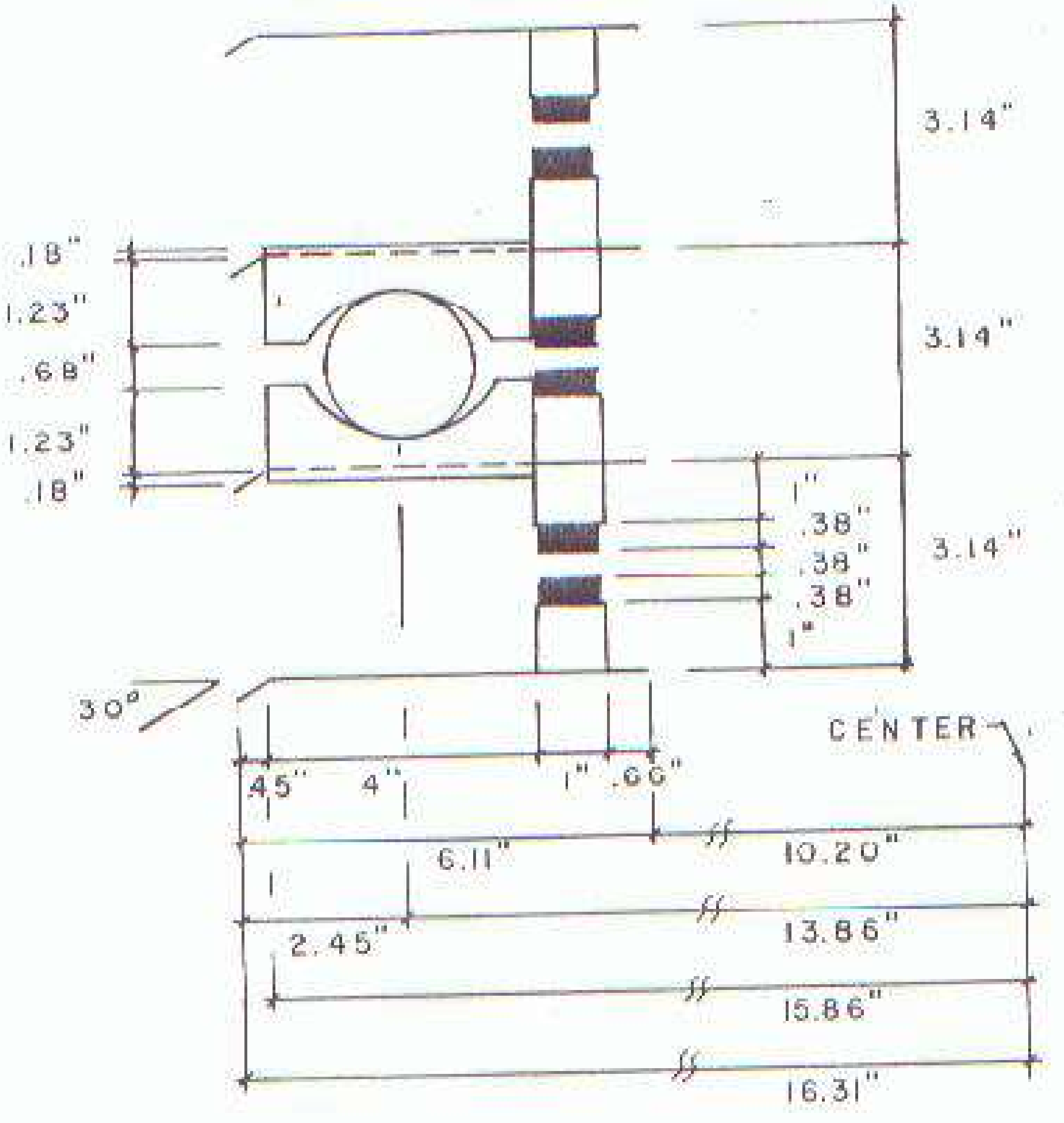
NOTES:
(1) WINGS MUST BALANCE PERFECTTLY.
(2) ATTACTION PRODUCES ENERGY BETWEEN.
MIDDLE WINGS AT BREATHER-CREATES SPARK.
(3) SECOND STAGE PLACED BELOW FIRST STAGE WITHPLACEMENT OF TRANSFORMERS.ALL COMPONENTS ARE DOUBLED.CROSS PLACED AT UPPER WING AND CONTROL HANDLE WITH COLLAR PLACE BELOW 1ST CONE FOR SECOND STAGE.
(4) THIRD STAGE BELOW 2ND STAGE WITH LIVING QTRS AND ALL COMPONENTS ARE AGAIN DOUBLED.TWO POWERS CAN CREATE FOUR POWERS.4TH STAGE FOLLOWS.
(5) DIMENTIONAL SIZE MUST BE CORRECT.
(6) AIR BEING CHARGED PRODUCES NATURAL GASES.
(7) WINGS NEED SUFFICIENT CLEARANCE FOR EXPANSION.
(8) CERAMIC 5 BAR MAGENTS MEASURING 1.875x.875x.390w/2.18) COUNTERSUNK HOLES THRU.390 DIAMETER HOLES.LARGER#5 MAGNETTS MAY BE USED.8.33x4.66 CERAMIC 5 CENTER MAGNETS ARE DOUGHONUT SHAPEED.

maybe used.8.33x4.66 CERAMIC 5 CENTER MAGNETS ARE DOUGHNUT SHAPED. INSIDE MAGNETS ARE END TO END. OUTSIDE VERTICAL.ALL BAR MAGNETS ARE IN REJECTION.

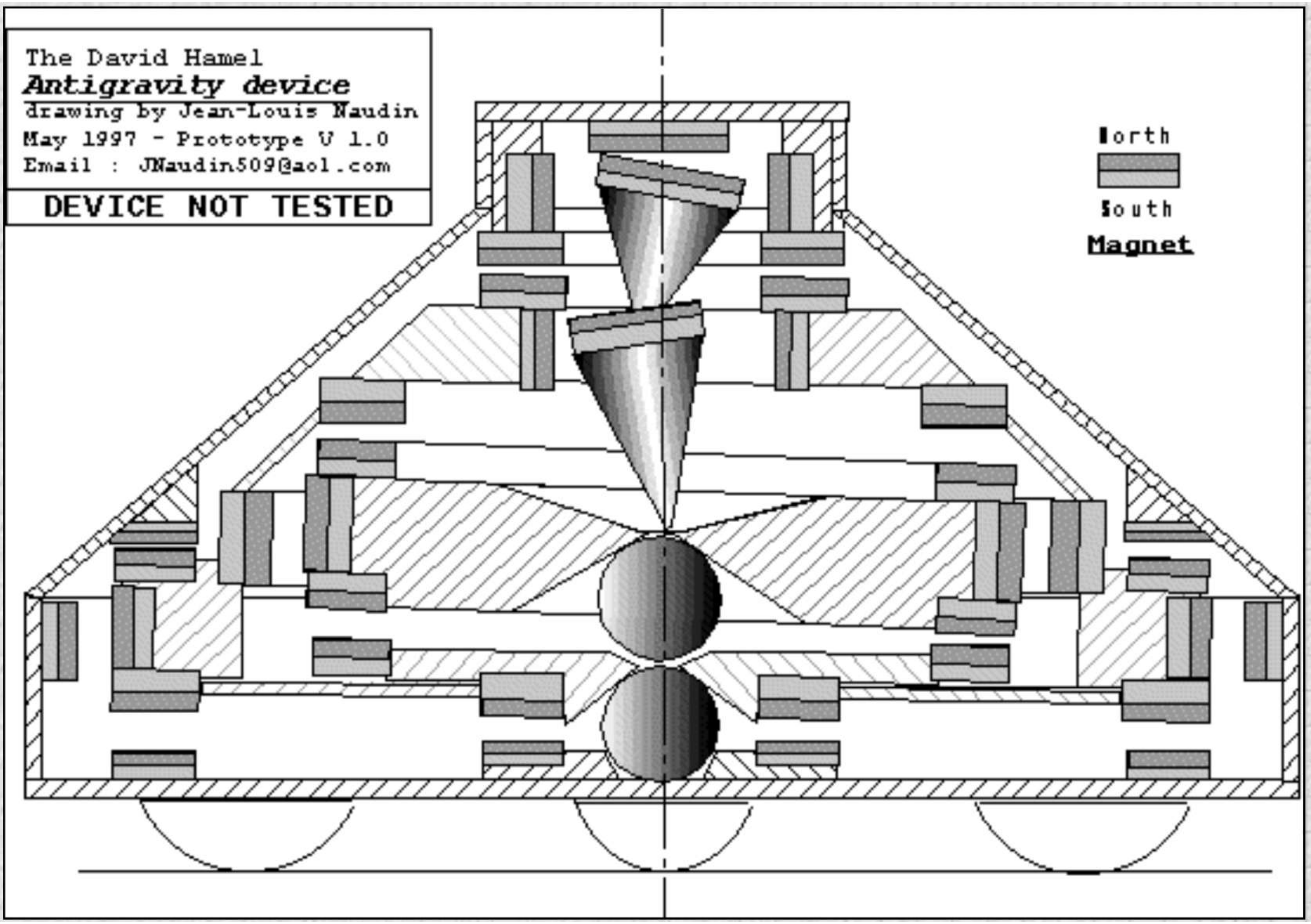

N
S
Top UFO Motor Wing
Iron Pipe Absorbs
South Pole of Magnet
S
N
N
S
Iron Pipe Absorbs
South Pole of Magnet
S
Bottom UFO Motor Wing
N
Use All North Poles In UFO Motor
(Except where the two wings are in attraction)

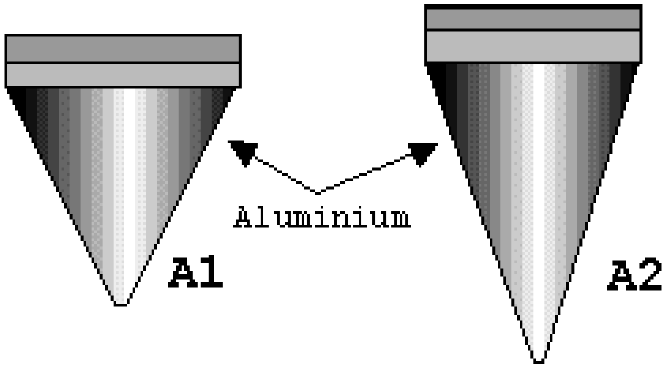


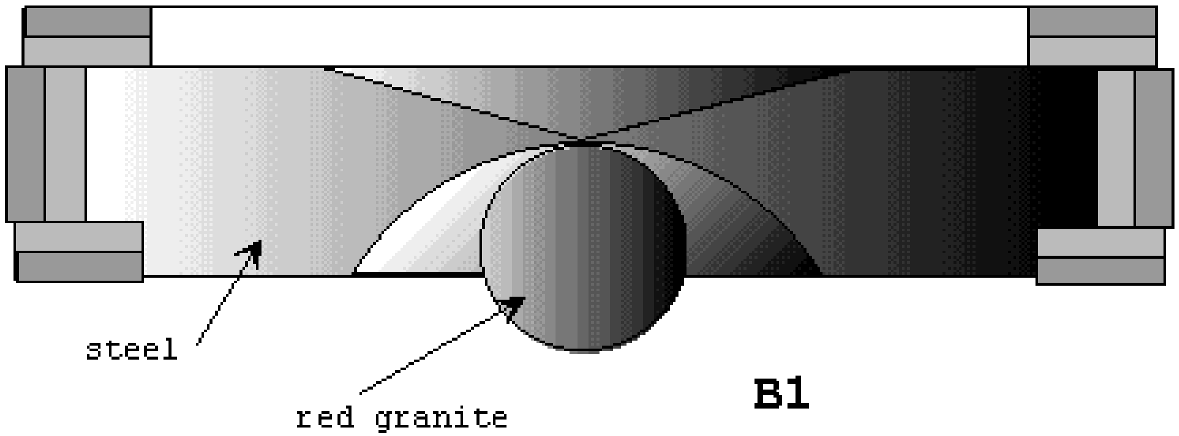

Lower Ring


3.14"
.18"
1.23"
3.14"
.68"
1.23"
.18"
1"
.38"
.38"
3.14"
.38"
1"
30°
CENTER
.45"
4"
1"
.66"
6.11"
10.20"
2.45"
13.86"
15.86"
16.31"


Reynolds Wrap


The David Hamel
Antigravity device
drawing by Jean-Louis Naudin
May 1997 - Prototype V 1.0
Email : JNaudin509@aol.com
DEVICE NOT TESTED
North
South
Magnet

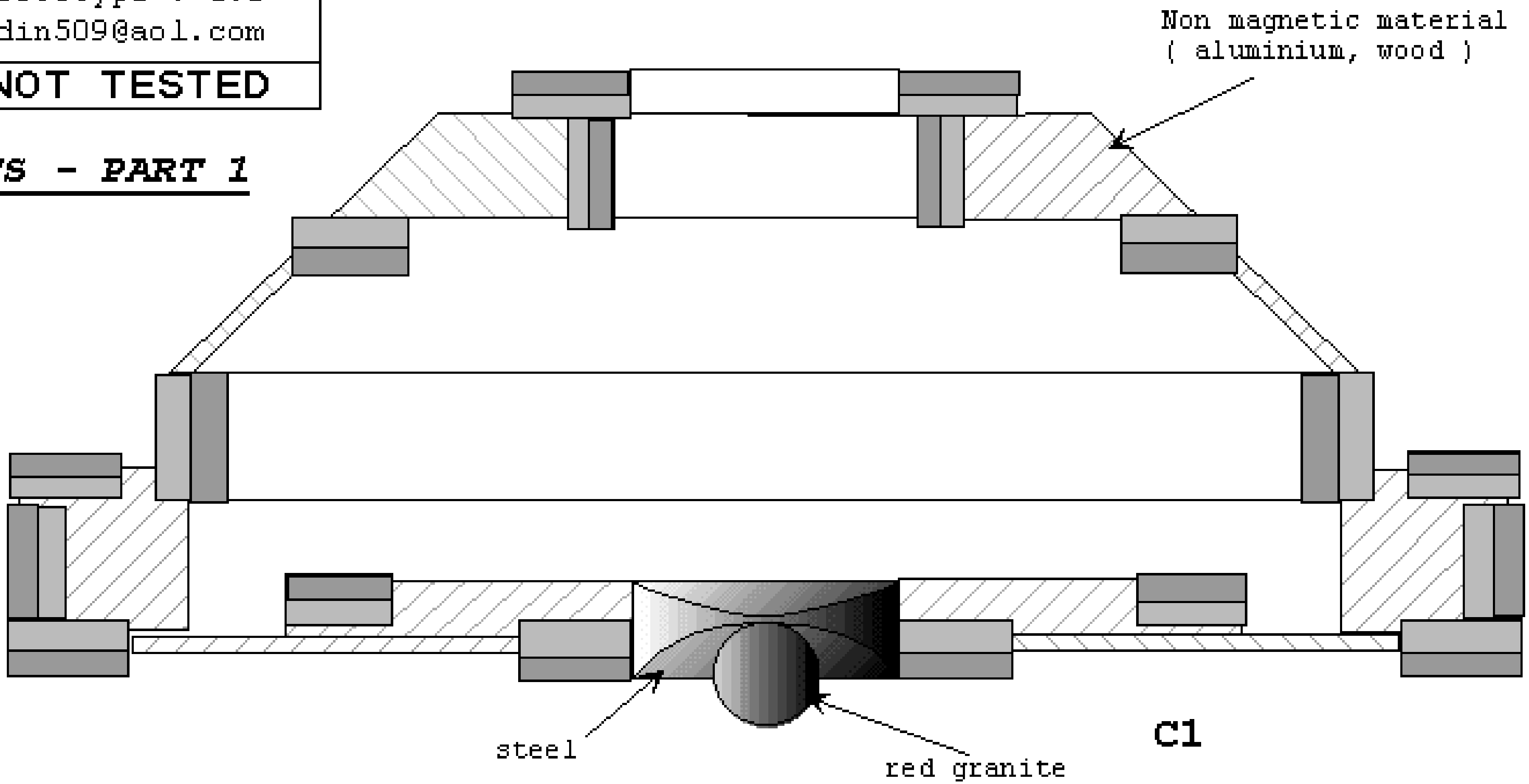




The David Hamel
Antigravity device
drawing by Jean-Louis Naudin
May 1997 - Prototype V 1.1
Email : JNaudin509@aol.com

DEVICE NOT TESTED

COMPONENTS - PART 1



The David Hamel

Antigravity device

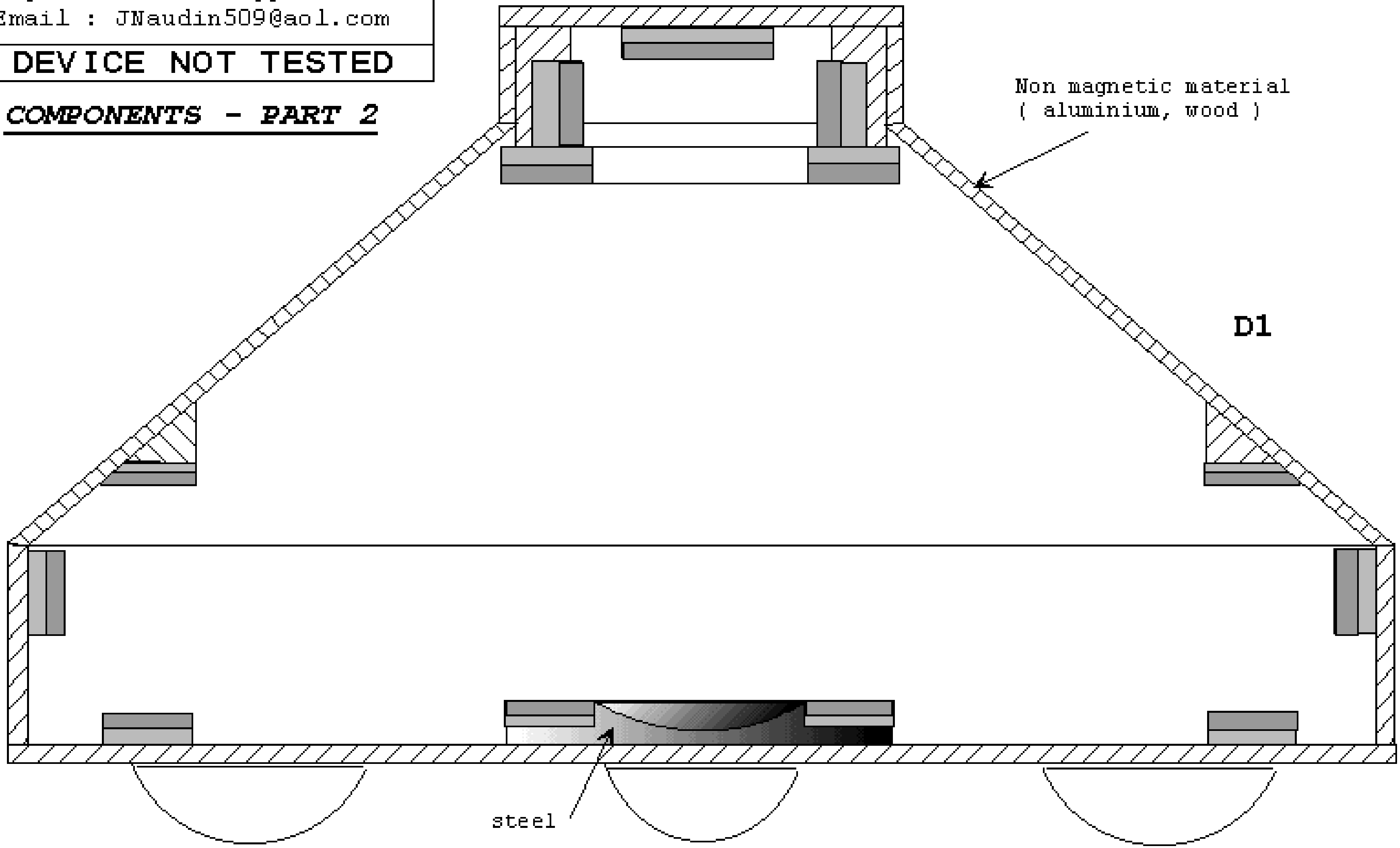
drawing by Jean-Louis Naudin

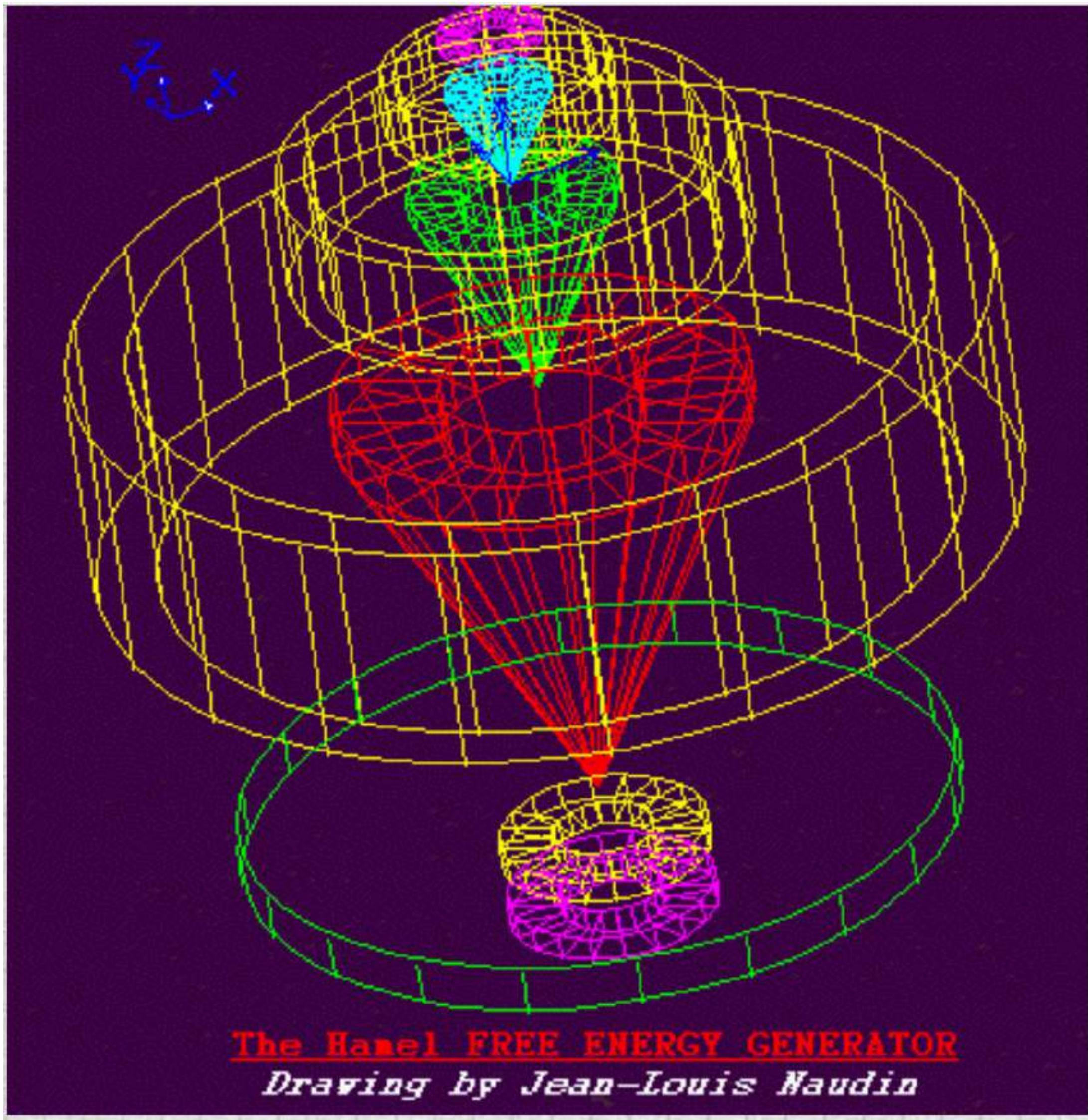
May 1997 - Prototype V 1.1

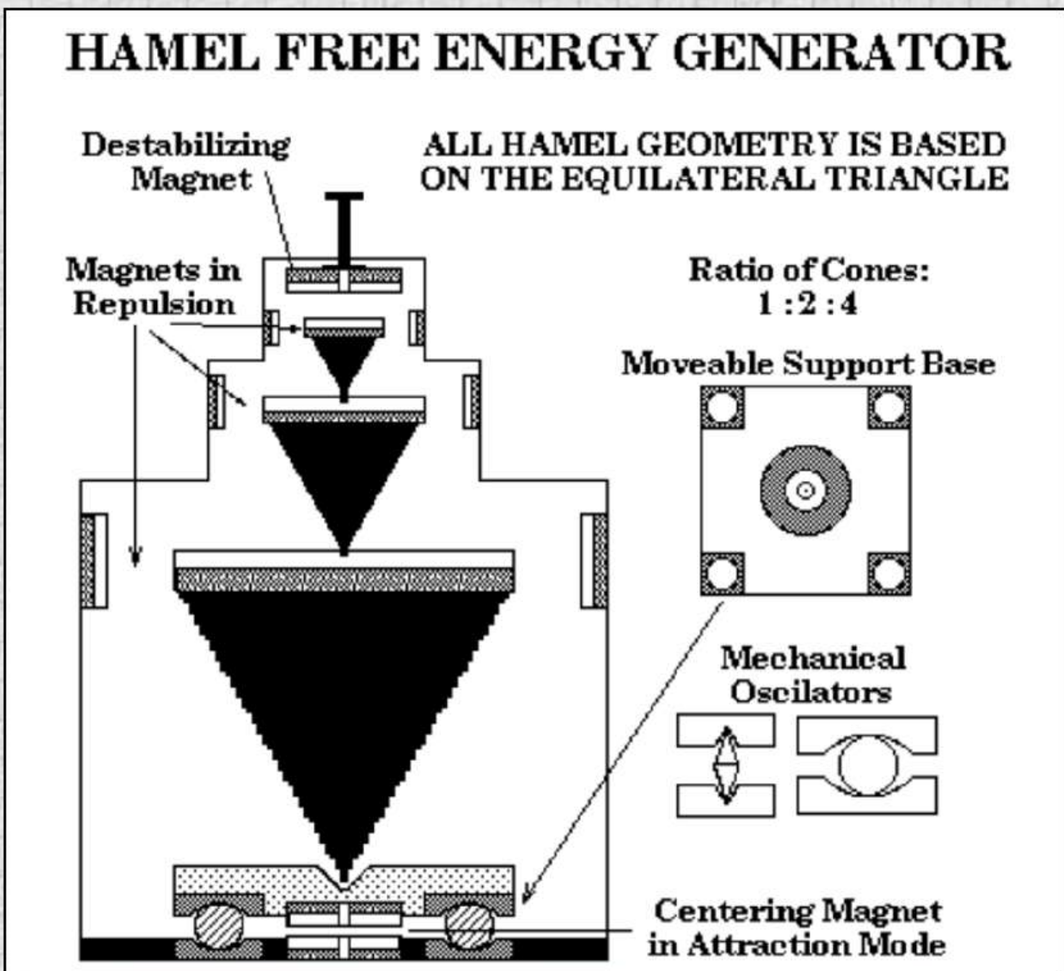
Email : JNaudin509@aol.com

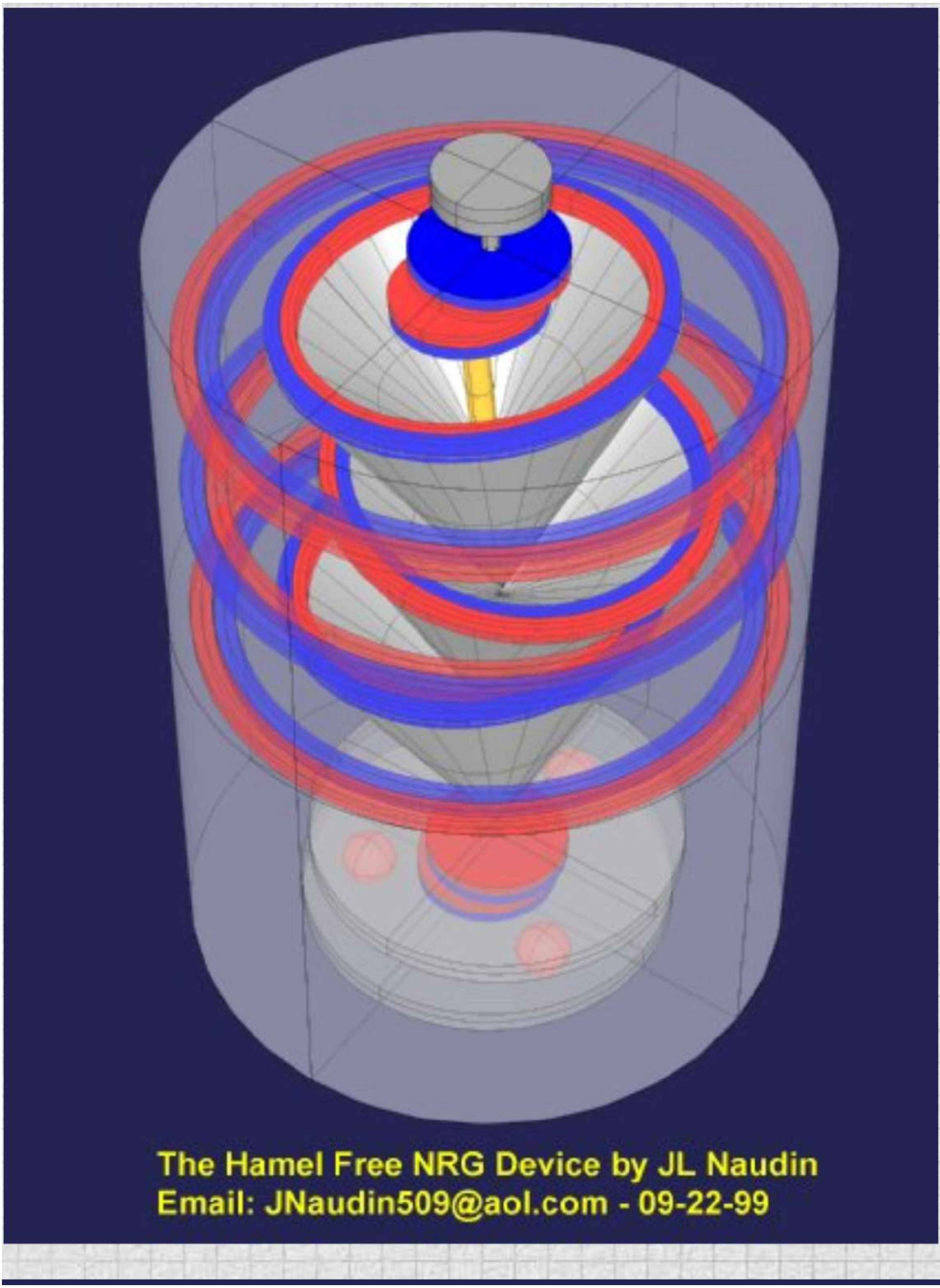
DEVICE NOT TESTED

COMPONENTS - PART 2

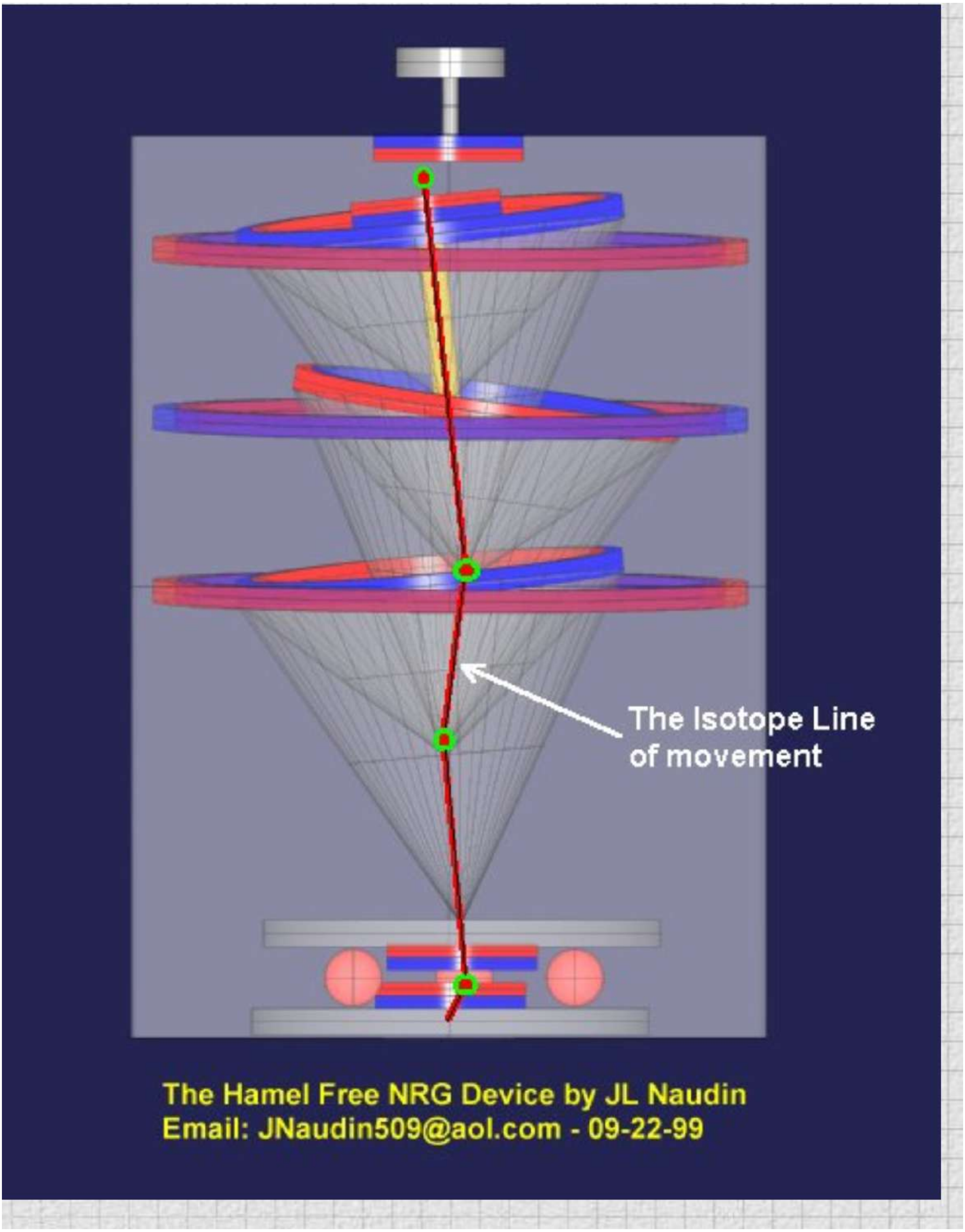



The Hamel FREE ENERGY GENERATOR
Drawing by Jean-Louis Naudin

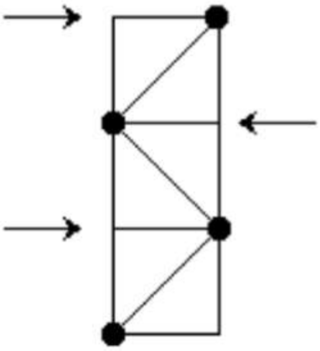

HAMEL FREE ENERGY GENERATOR
Destabilizing Magnet
ALL HAMEL GEOMETRY IS BASED ON THE EQUILATERAL TRIANGLE
Magnets in Repulsion
Ratio of Cones: 1 : 2 : 4
Moveable Support Base
Mechanical Oscilators
Centering Magnet in Attraction Mode



The Hamel Free NRG Device by JL Naudin
Email: JNaudin509@aol.com - 09-22-99

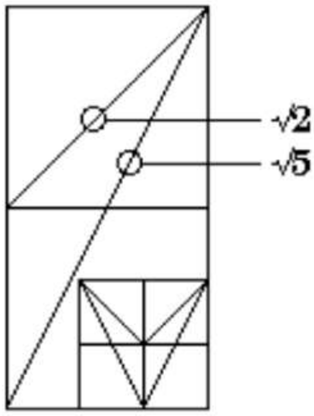

The Isotope Line of movement
The Hamel Free NRG Device by JL Naudin
Email: JNaudin509@aol.com - 09-22-99

"Broken Line"

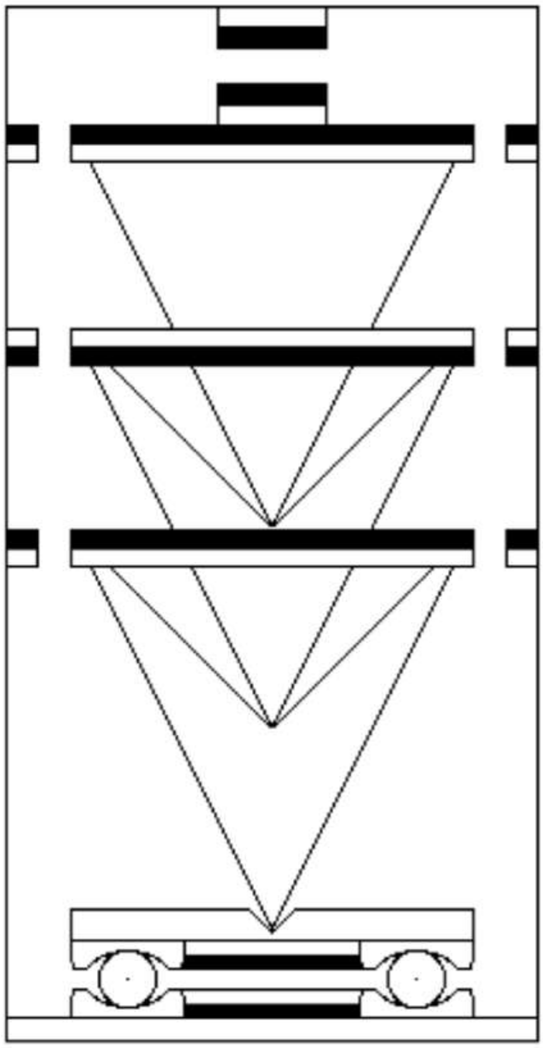


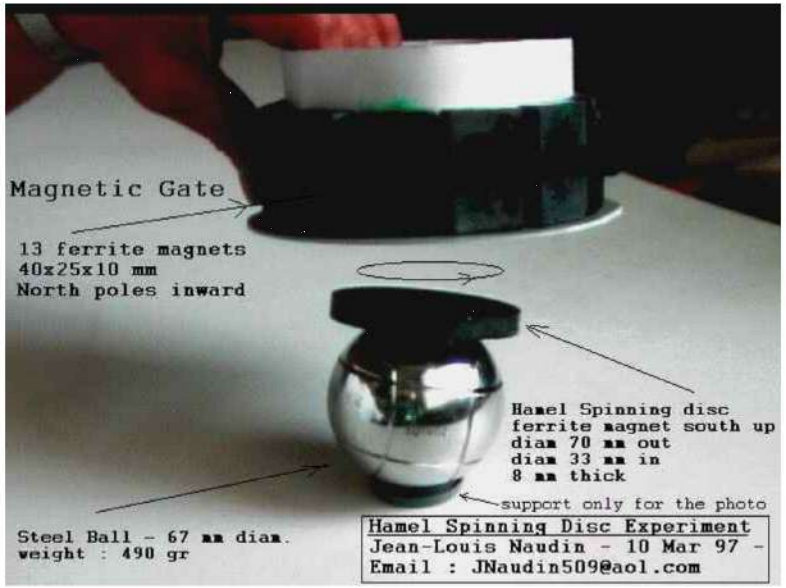
Oscillating Movement of Cones

Sacred Roots



Epyptian Djed





This device is based on Hamel magnetic motor demonstration. The Magnetic gate is build with 13 ferrite magnets 40x25x10 mm sticked outside a 100 mm PVC tube. The Hamel spinning disc is build with a ring magnet (outer diam.70 mm, inner diam. 33 mm, 8 mm thick) sticked on a 67 mm steel ball (490 gr weight).

Operation :

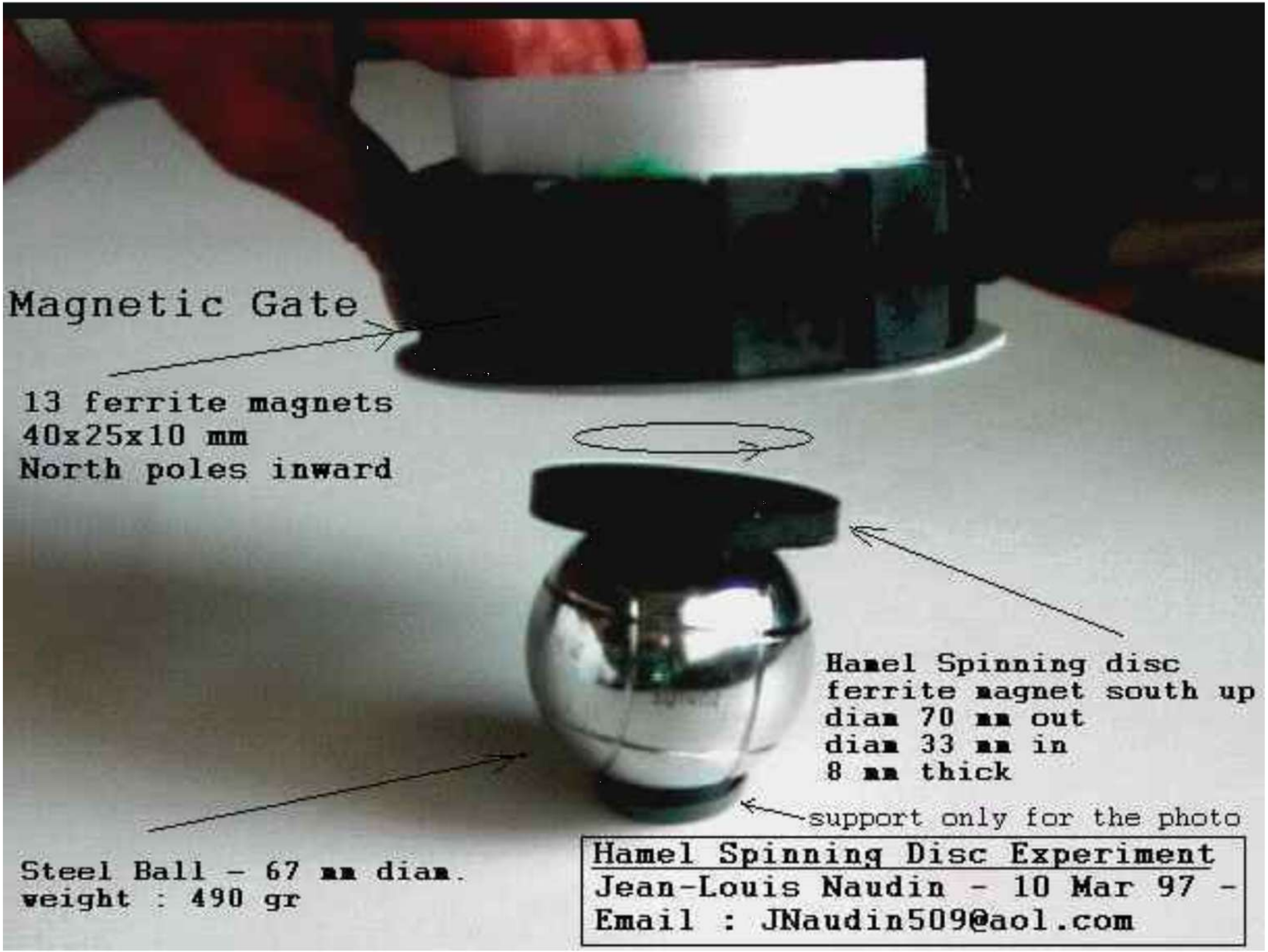
Take your magnetic gate in hands under the Hamel spinning device. The ring magnet start to spin fast like a top, if you tune correctly the distance between the magnetic gate and the ring magnet.The magnetic gate above must be tilted and slightly offset axially... poles arranged so the magnets attract, not repel.

Comments :

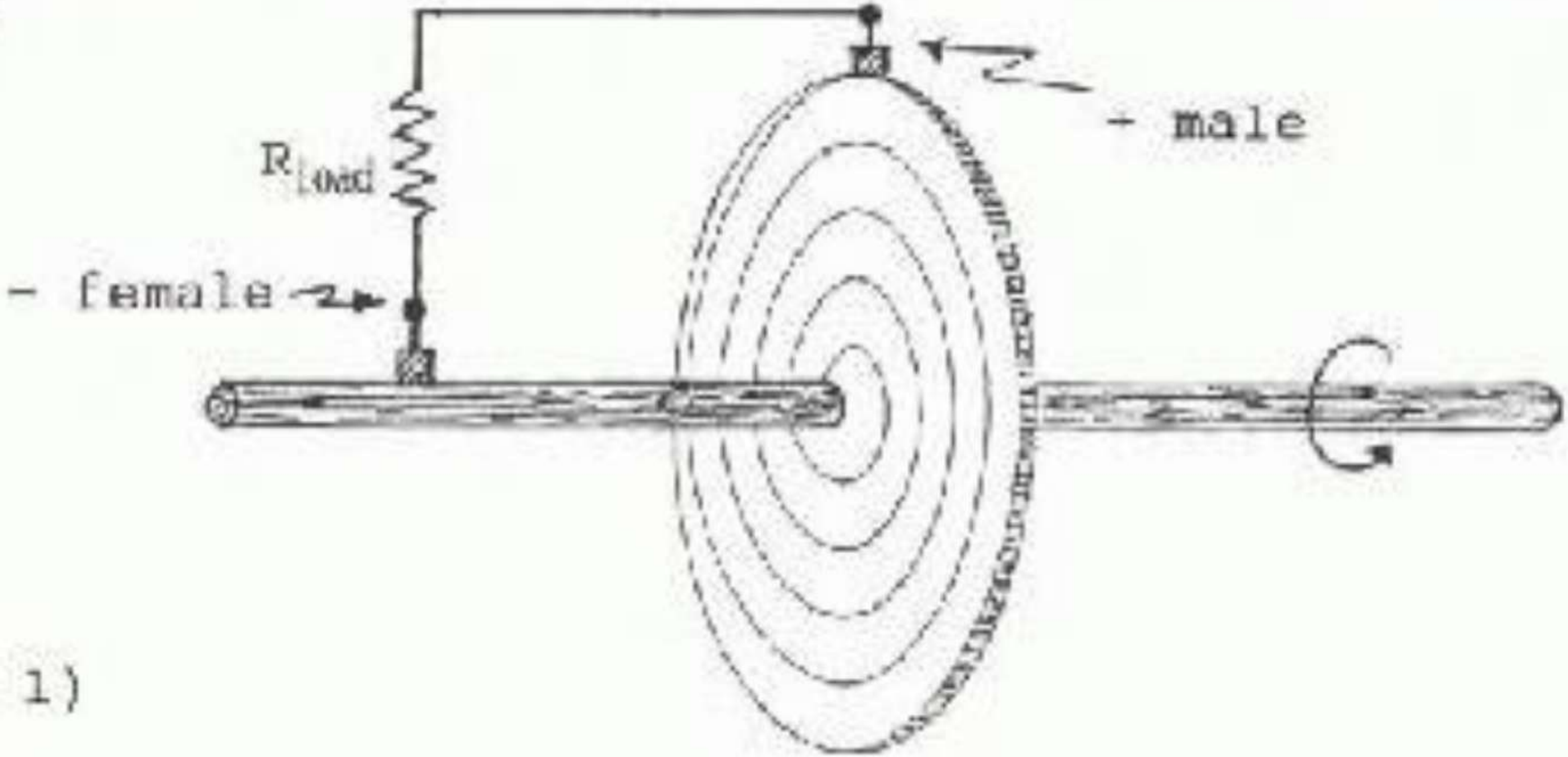
I can keep it spinning by moving and tilting the upper assy slowly from side to side. This changes the force vector to one side of the ring/ball and precession takes over. This MANUAL ALTERATION (with hands !!) of the force vector and precession is the reason of the result spin. If you put the magnetic gate in a fixed position, the Hamel spinner disc begin to spin but stops after a short time.......

(For more informations about "magnetic gate" see at : John Bedini's Magnetic Gate)

If you need more informations or if you have any suggestions send me your **Feedback**

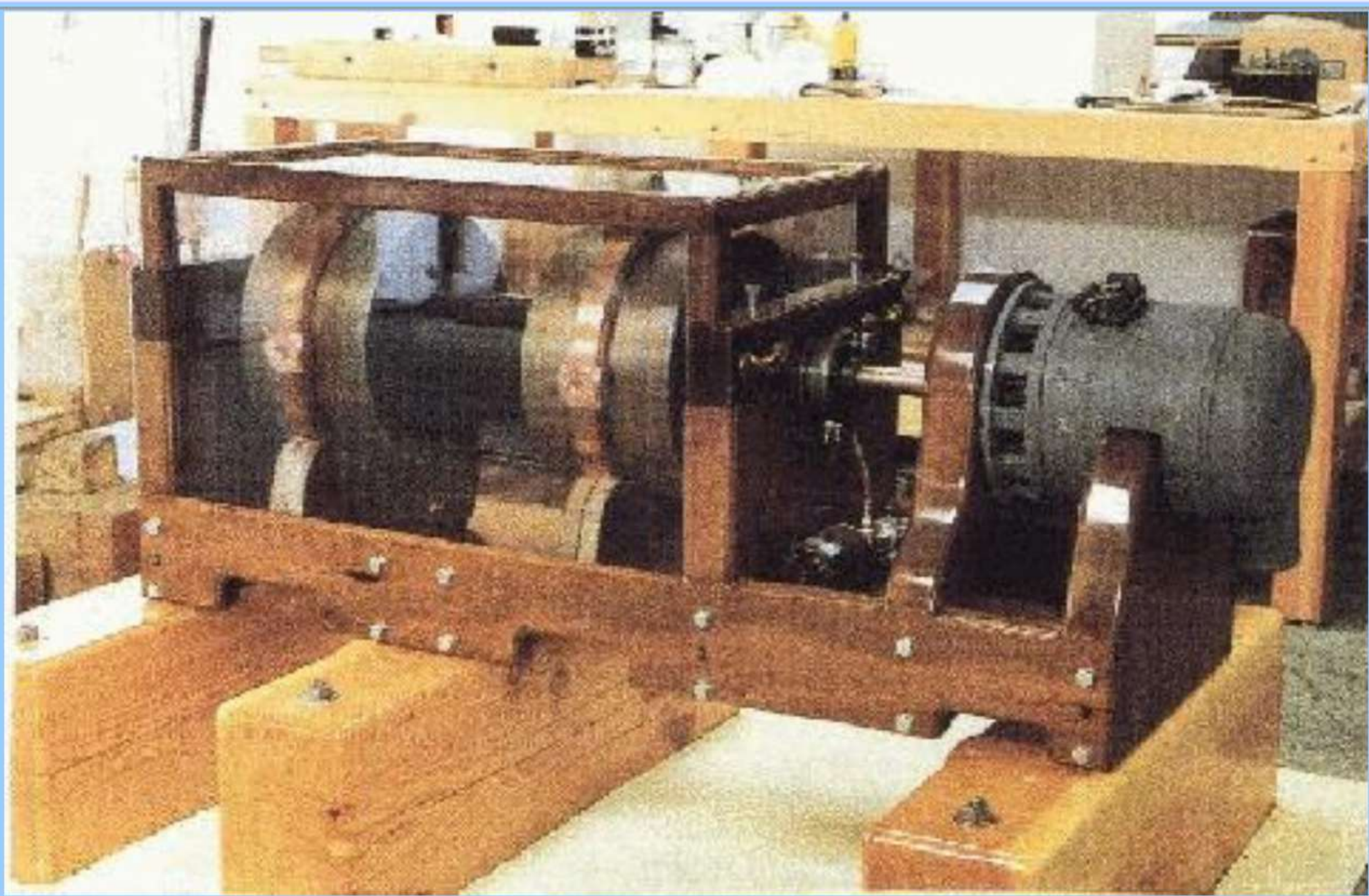

Magnetic Gate
13 ferrite magnets
40x25x10 mm
North poles inward
Hamel Spinning disc
ferrite magnet south up
diam 70 mm out
diam 33 mm in
8 mm thick
support only for the photo
Steel Ball - 67 mm diam.
weight : 490 gr
Hamel Spinning Disc Experiment
Jean-Louis Naudin - 10 Mar 97 -
Email : JNaudin509@aol.com

potentials is a rotating, magnetised, electrically c
spiral.



(figure 1)

PRIMORDIAL ENERGY



N-1 Homopolar Generator

"If you can imagine it, it's imaginable -
if it's imaginable, it must be real."
- Bruce DePalma, 1997

Quadra pole N-machine

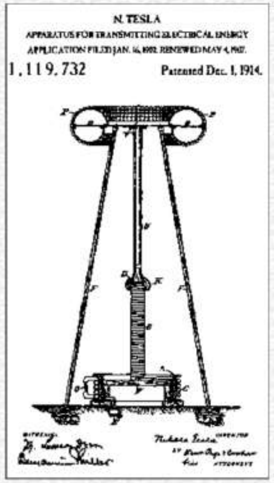
under test condition in 1995

Avramenko's Free Electrons Pump (AFEP v1.0)

By Jean-Louis Naudin

*created on November 1st, 1999 - **JLN Labs** - Last update November 3rd, 1999*

The AFEP experiment is based on the russian patent application filed on May 10th, 1993 by Stanislav and Konstantin Avramenko (PCT/GB93/00960). This a staight-forward application of the single-wire electrical energy transmission based upon the principle of longitudinal electrostatic waves as described by Nikola Tesla in the 1890s.



The AFEP device v1.0 uses two main effects :

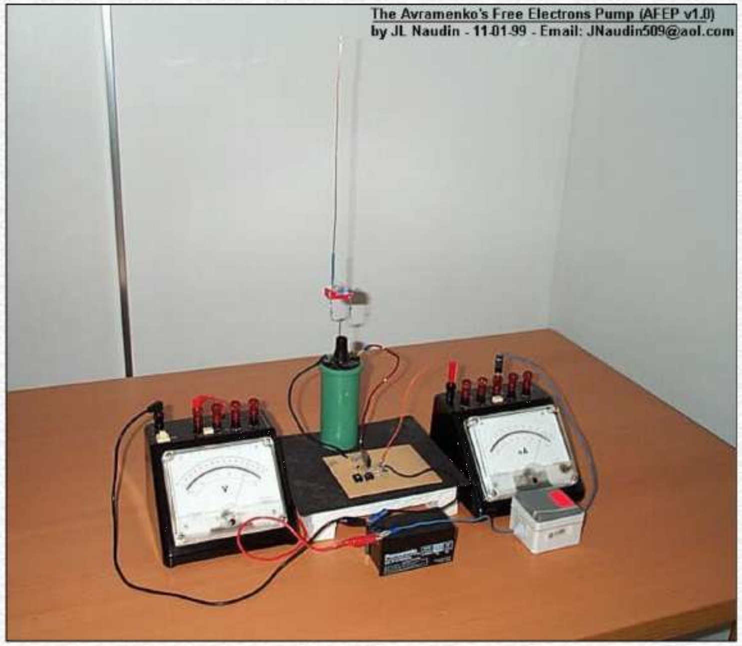
- The Avramenko's single-wire transmission plug system
- The capacitance coupling with the earth atmosphere for tapping free electrons in the air medium.

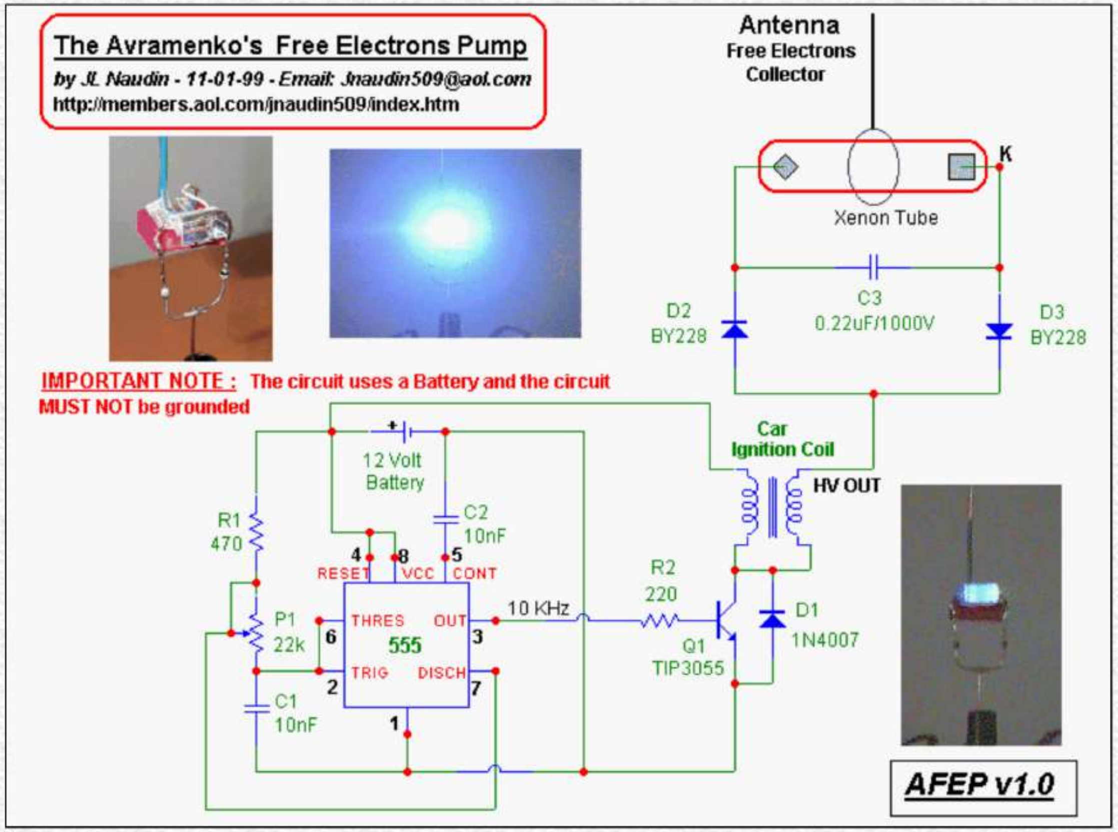
Some testing devices and experiments have already been done successfully by Stefan Hartmann with the "Car ignition coil experiments with Avramenko plug" and freely released on the Web on October 26th, 1999 (thanks Stefan...).

So, today, I have reproduced successfully the Hartmann's setup with some improvements :

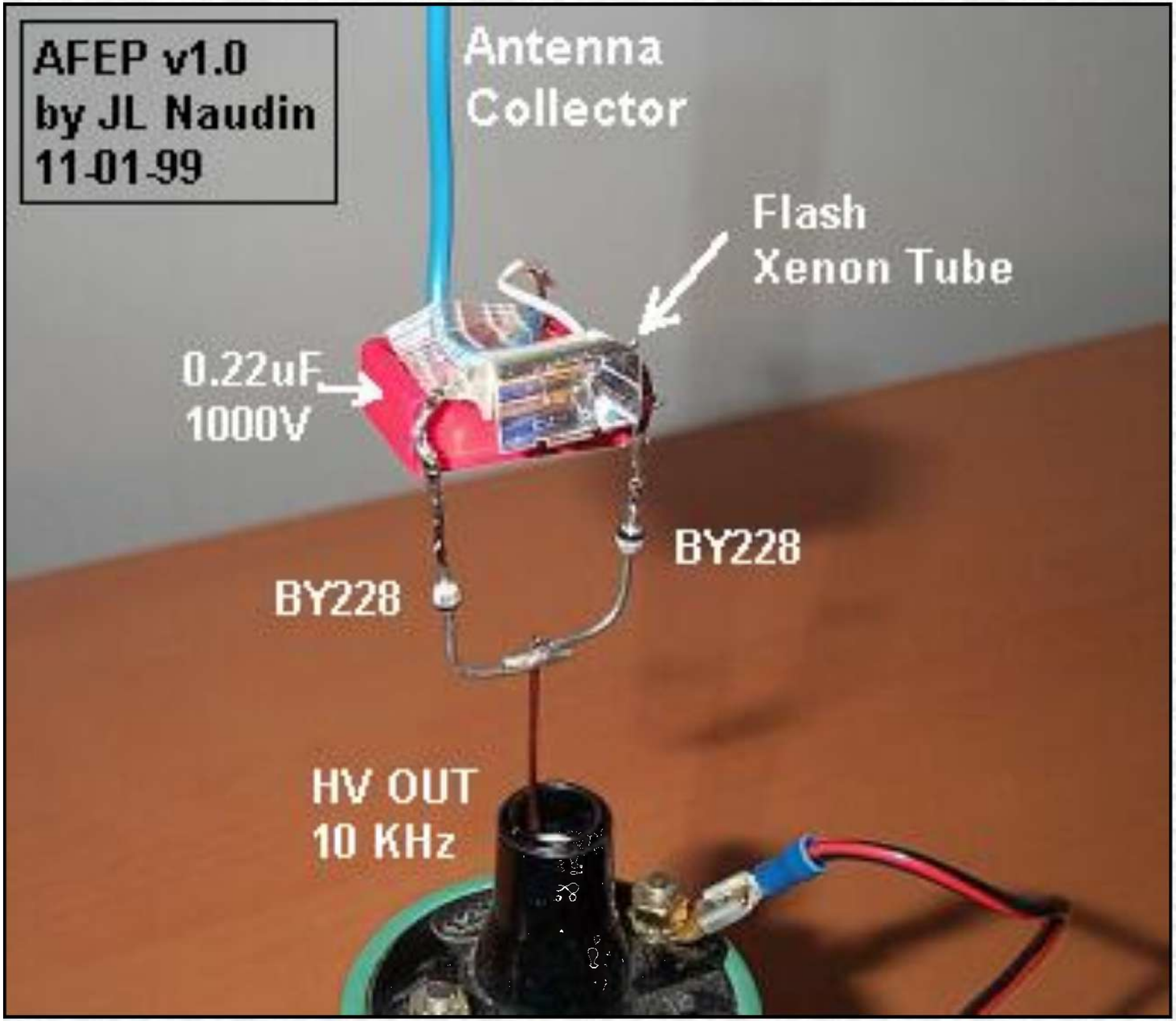
- The electronic generator (aka the Avramenko's monovibrator) runs at a higher frequency (10KHz),
- I have used a xenon flash tube instead of a simple spark gap,
- I have used a copper wire as an antenna for the coupling with the earth atmosphere (and not with the ground as in the Stefan's test), the sucked free electrons act as a trigger for the xenon flash.

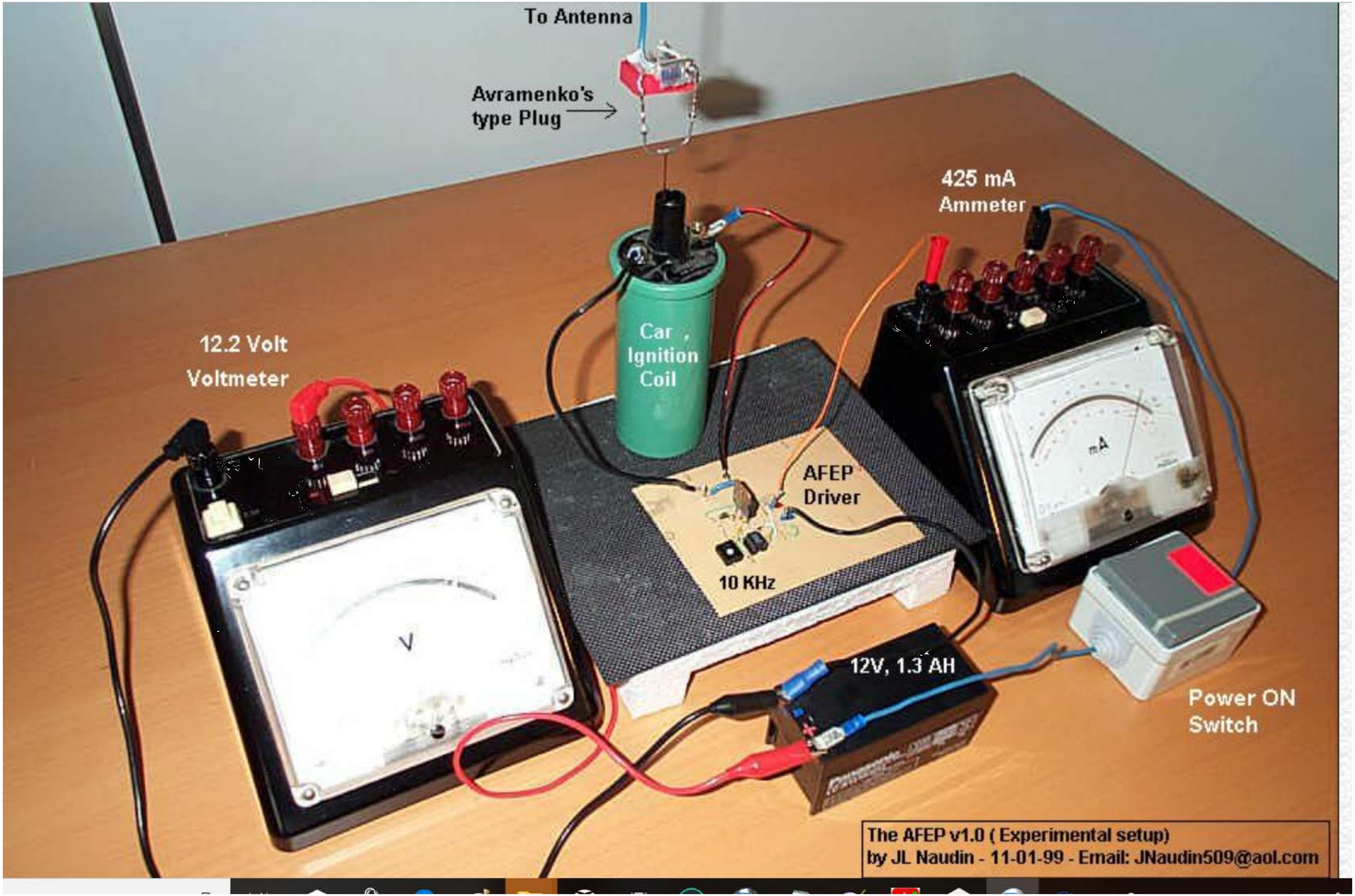
The AFEP device MUST BE powered by a battery source (I have used a 12V 1.3 AH lead acid battery) and MUST NOT BE GROUNDED. This is very important, because the system MUST BE OPEN. If you ground the AFEP generator circuit, you build a common closed system and free electrons can't be tapped from the atmosphere.





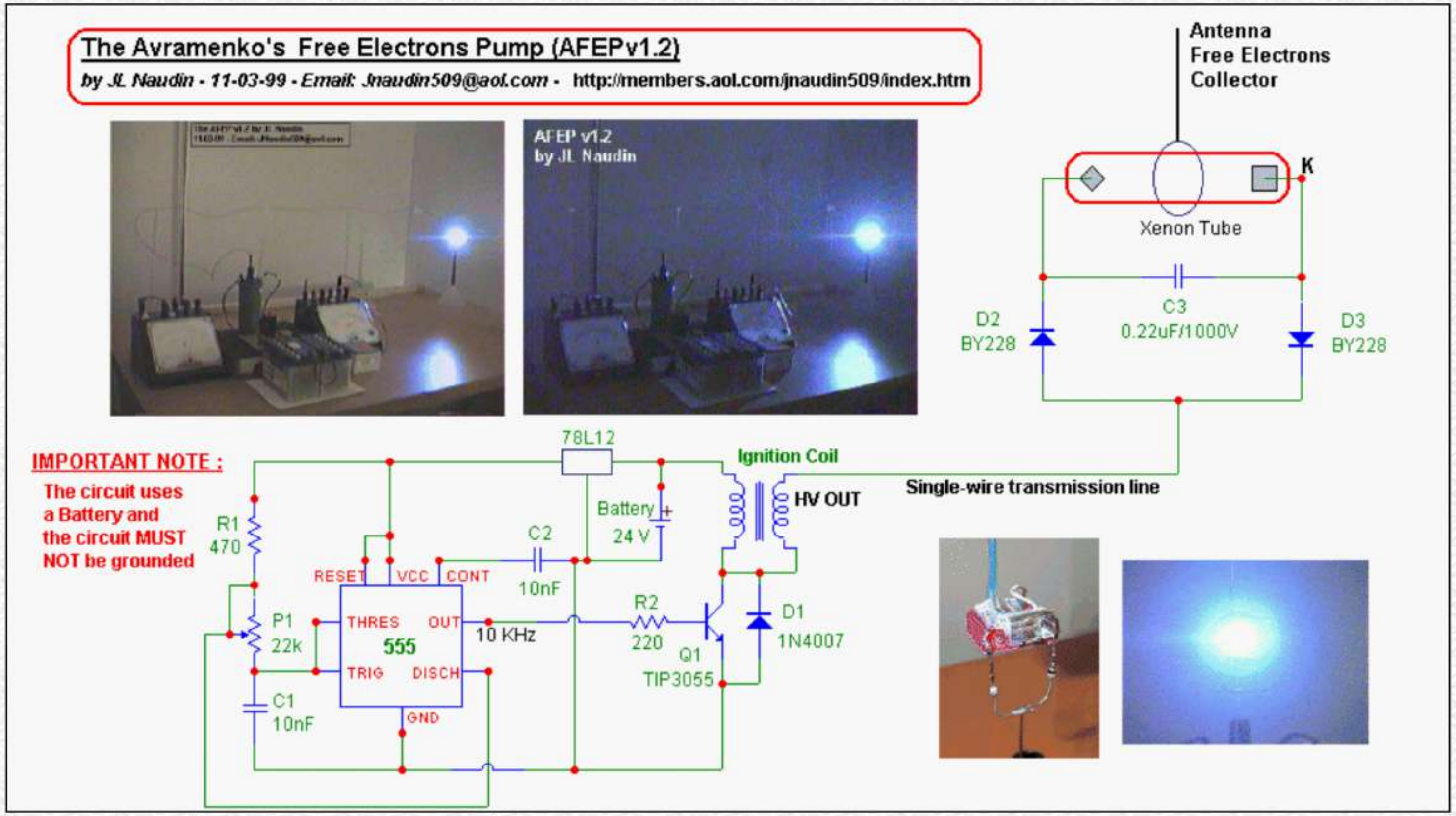
The main driver circuit uses a basic 555 square waves oscillator tuned at 10 KHz for the best output. The TIP 3055(Q1) is used as a common switcher for the car ignition coil. The most important part is the enhanced Avramenko's plug :


AFEP v1.0
by JL Naudin
11-01-99
Antenna
Collector
Flash
Xenon Tube
0.22uF
1000V
BY228
BY228
HV OUT
10 KHz


To Antenna
Avramenko's type Plug
425 mA Ammeter
Car Ignition Coil
12.2 Volt Voltmeter
AFEP Driver
10 KHz
V
mA
12V, 1.3 AH
Power ON Switch
The AFEP v1.0 (Experimental setup)
by JL Naudin - 11-01-99 - Email: JNaudin509@aol.com

The **AFEP experiment** *is based on the russian patent application filed on May 10th, 1993 by Stanislav and Konstantin [Avramenko]() ([PCT/GB93/00960]()). This a staight-forward application of the single-wire electrical energy transmission based upon the principle of longitudinal electrostatic waves as described by Nikola Tesla in the 1890s.*

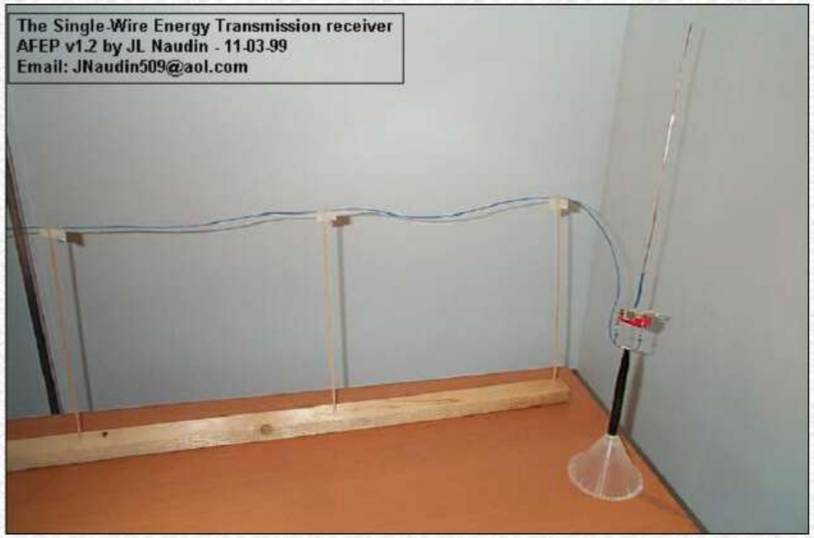
The **AFEP v1.2** **is a improved version of the AFEP v1.0, I have added a small 78L12 DC regulator for the 555 square wave pulses generator circuit. The AFEP circuit is now powered with a 24V DC source (two lead acid 12V/4 AH batteries) and always ungrounded.**



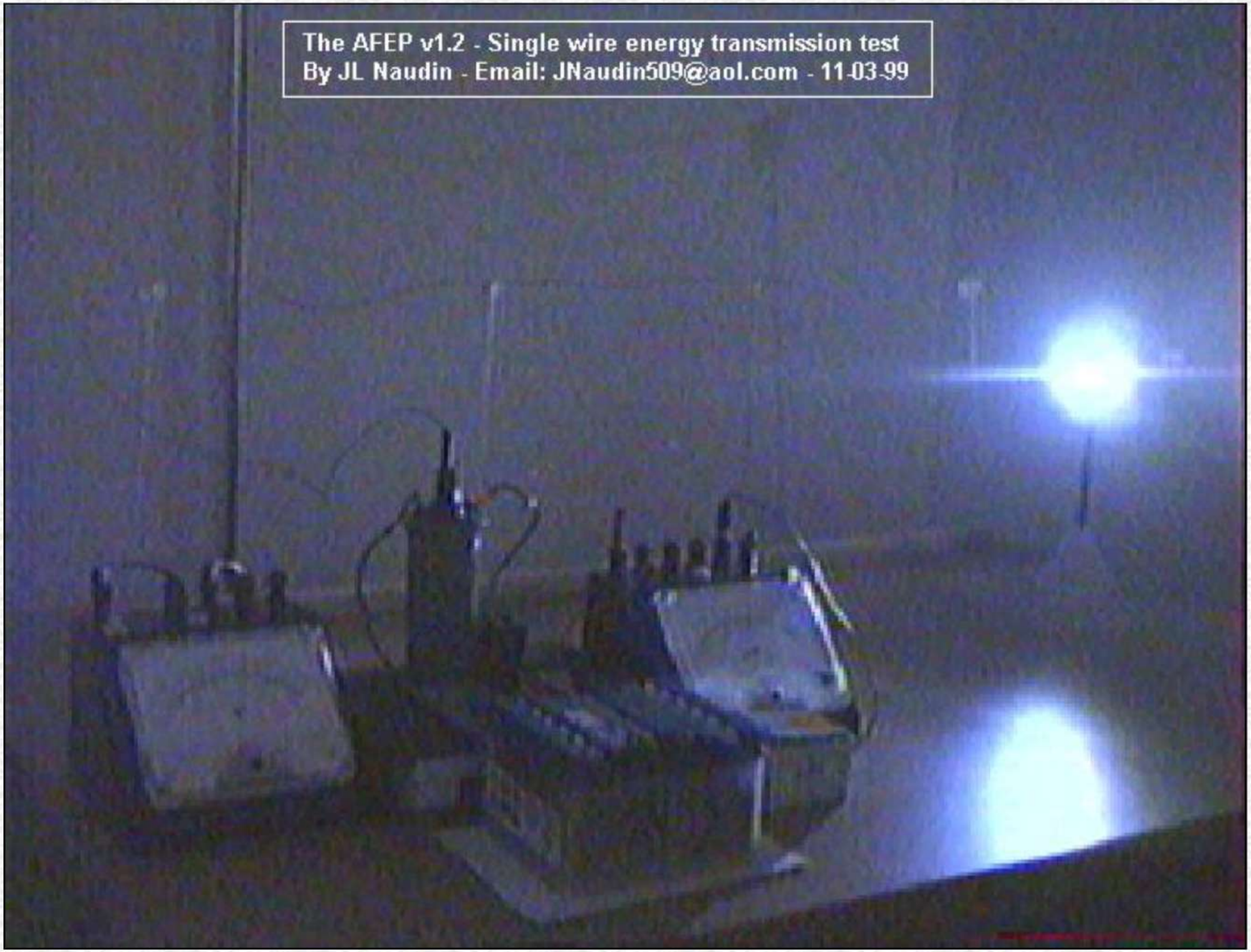
The First Single-Wire Energy Transmission test (11-03-99)

The purpose of this test is to check the inventor's claim about the energy transmission through a single wire with the Avramenko's plug.

the enhanced Avramenko's plug previously used with the **AFEP v1.0** has been connected at the end (see below).



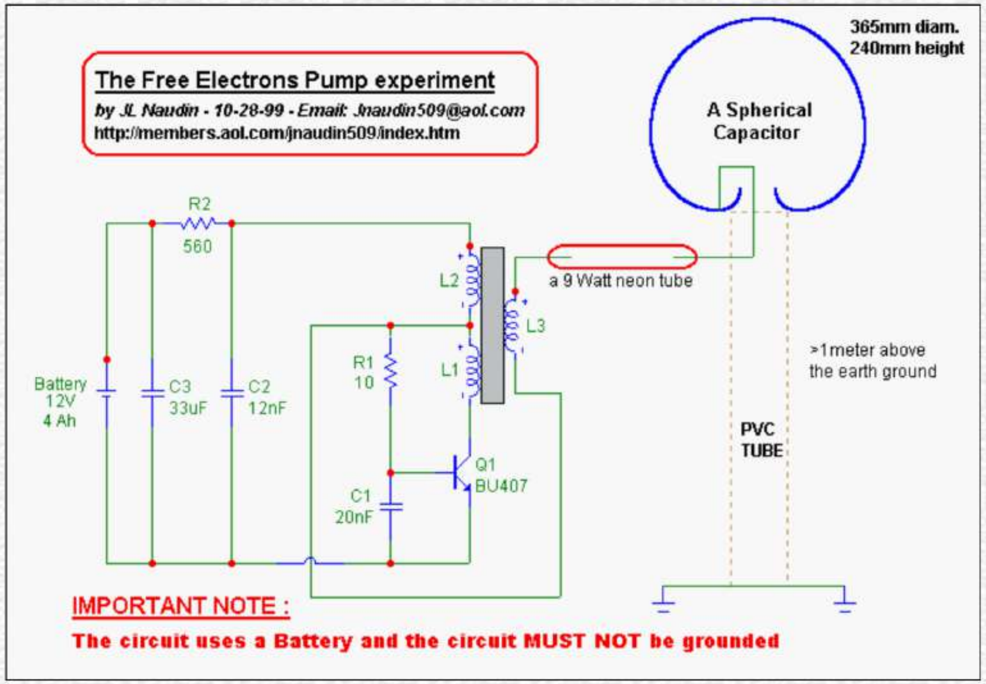
Test Results : When the AFEP generator is switched on, the xenon tube flash immediately with the same strenght and period than without the line. This confirms the Avramenko's claim.



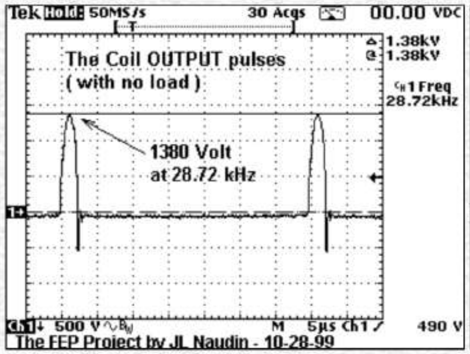
A bright and strong flash light between the enhanced Avramenko's plug in the darkness of the JLN Labs.
Energy is transmitted through the single-wire and free electrons sucked from the air are used for triggering the flash...

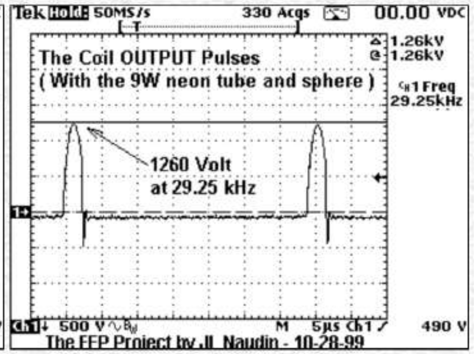
The FEP v1.0 is an enhanced version which uses a spherical capacitor coupled with the earth atmosphere. As Nikola Tesla had used in the Power Wave experiment in Colorado springs in June 26, 1899 and also during his tests of the first models of the Tesla Magnifier Amplifier tower, the FEP v1.0 uses the same principle for sucking free electrons from the atmosphere : " ***To produce an electrical movement of the required magnitude it is desirable to charge the terminal as highly as possible, for while a great quantity of electricity may also be displaced by a large capacity charged to low pressure, there are disavantages met with in many cases when the former is made too large. The chief of theses are due to the fact that an increase of the capacity entails a lowering of the frequency impulses or discharges and diminution of energy of vibration....." *** (Tesla US Patent number 1,119,736 : "Apparatus for transmitting electrical energy" (issued Dec. 1, 1914)).

The FEP v1.0 uses a spherical capacitor made with an aluminum hollow sphere (365 mm diam. and 240 mm height). A 9 Watt neon tube (OSRAM 9W/Dulux S 41/82) is connected between the FEP generator and the aluminum sphere.

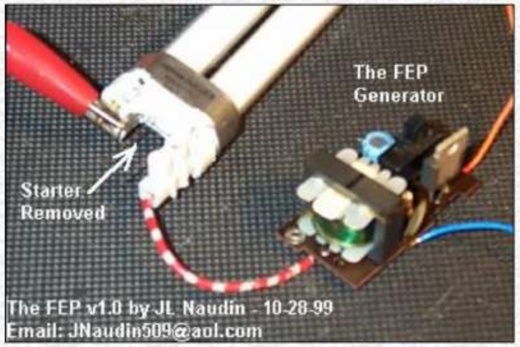


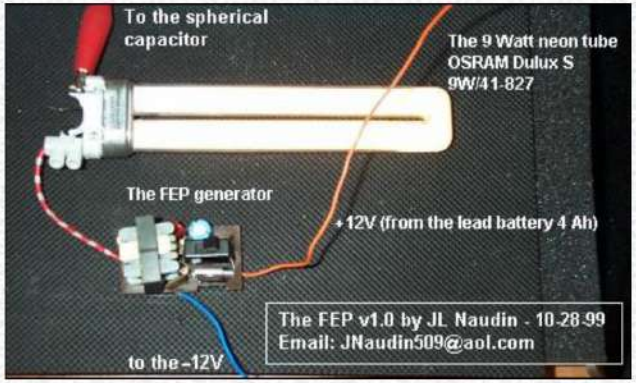
The FEP generator is a High Voltage Pulses generator which produces 1380 V pulses at about 29 kHz (see below). The FEP transformer (L1,L2,L3) is a high frequency transformer (with ferrite core) which can be found in common portable neon lights (used for camping). But you can also use L1 (7 turns of 4/10mm), L2 (6 turns of 5/10), L3 (750 turns of 1/10) wound on a ferrite core 10mm diam. If you find a ready made ferrite HF transformer, this will be better.





The 9W neon tube is a common low consumption light tube, but I have removed its original starter circuit.



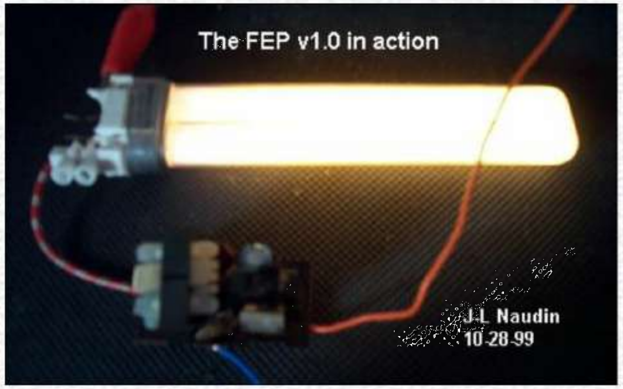


The FEP Generator <u>MUST BE powered by a battery source</u> (I have used a 12V 4 Ah lead acid battery) and <u>MUST NOT BE GROUNDED</u>. This is very important, because the system MUST BE OPEN. If you ground the FEP generator circuit, you build a common closed system and free electrons can't be tapped.

I have used an analog voltmeter and an analog ammeter, this is strongly recommended for avoiding some parasitic effects due to the electromagnetic waves induction (EMI) in some digital equipments which can generate some "false/true" measurements....

So, when the power is switched on <u>WITHOUT the neon tube</u> (with the FEP output left opened), the power input required for the functionning of the FEP circuit is 5.17 Watt (11.5 Volt and 450 mA DC input)(see below).

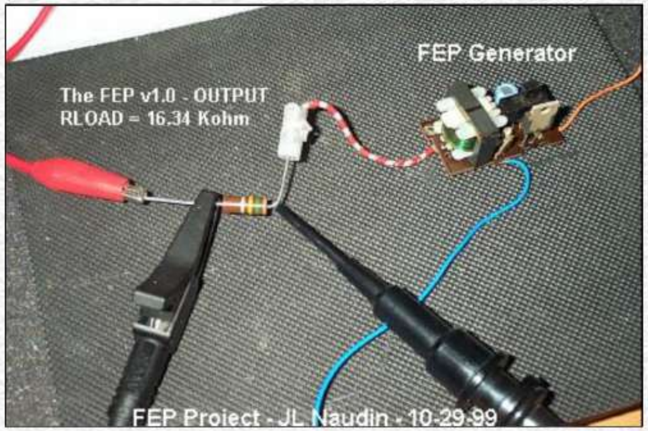
When the 9W neon tube is connected with its spherical capacitor, the power input DROPS to **4.66 Watt** (11.5 Volt and 405 mA DC input) while the neon tube throws out about 30% of its max light...(see below)



Note : If you don't have an aluminum spherical capacitor, you may also use a big aluminum sheet as a free electrons collector.

Now that you have a very simple electronic circuit that you can build and test by yourself, you will notice that this circuit works very well and shows that some free electrons can be tapped easily, from the atmosphere or from the ground with the FEP v1.0 device...

The 9 Watt neon tube has been replaced by a 15 Kohm-5 Watt (the exact value was 16340 ohm) carbon resistor (see below) :



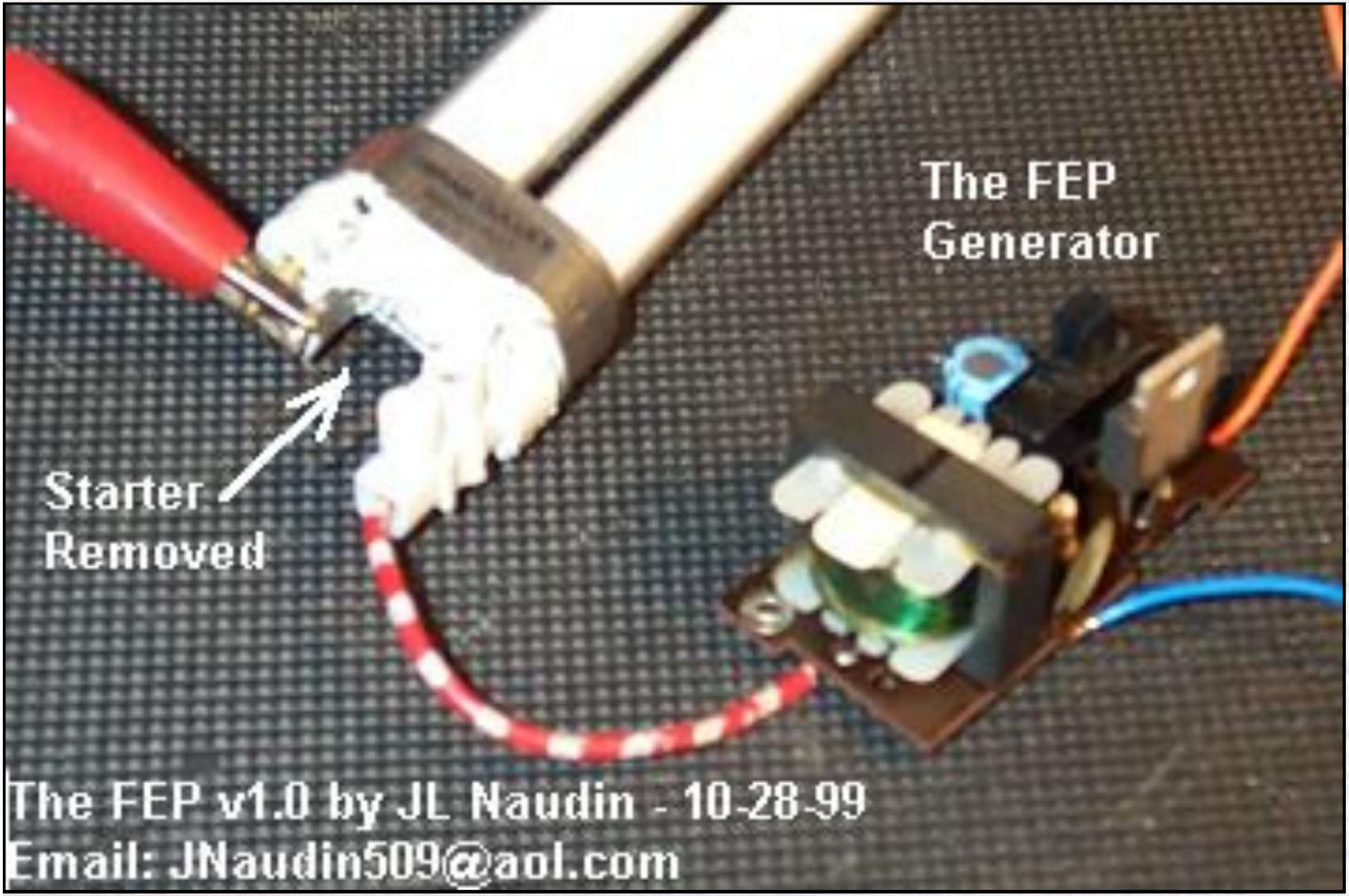
I have used a Textronix THS720P isolated and ungrounded channels oscilloscope for measuring the voltage accross the output resistor. The RMS and PEAK output voltages has been computerized automaticaly by the scope.

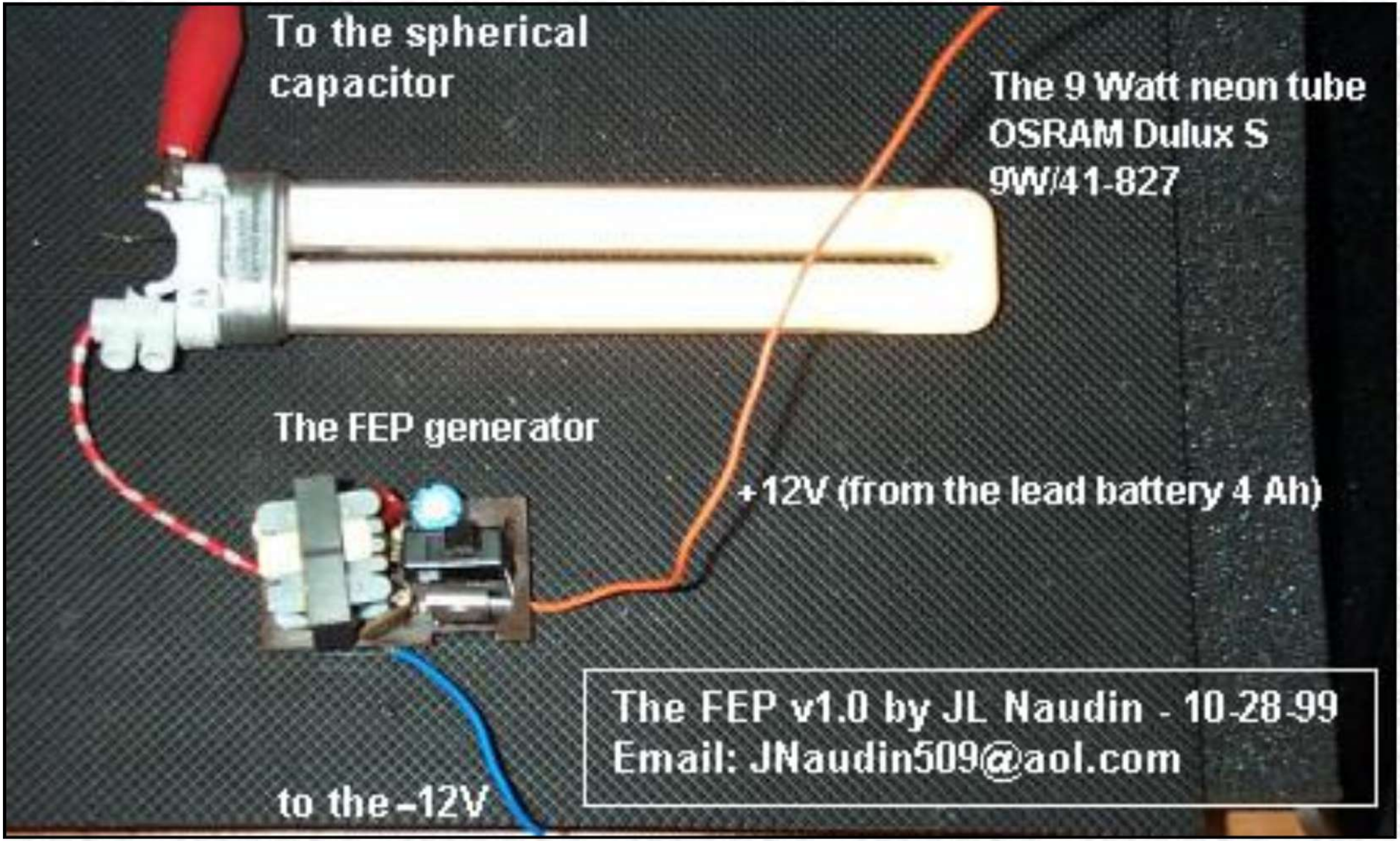
The FEP v1.0 (Input/Ouput)				by JL Naudin	10-29-99	Email: JNaudin509@aol.com			
DC INPUT					OUTPUT				
Vinp (V)	CurOut (A)	Pwr (W)	Del Pwr	Freq (kHz)	Rload (ohm)	Vout RMS (V)	Pwr RMS (W)	Vout Peak (V)	Pwr Peak (W)
11,3	0,34	**3,842**	-	30,75	**Nload**	1260,0	-	-	-
11,3	0,32	3,616	-0,226	31,19	**16340**	114,4	0,801	376	8,652

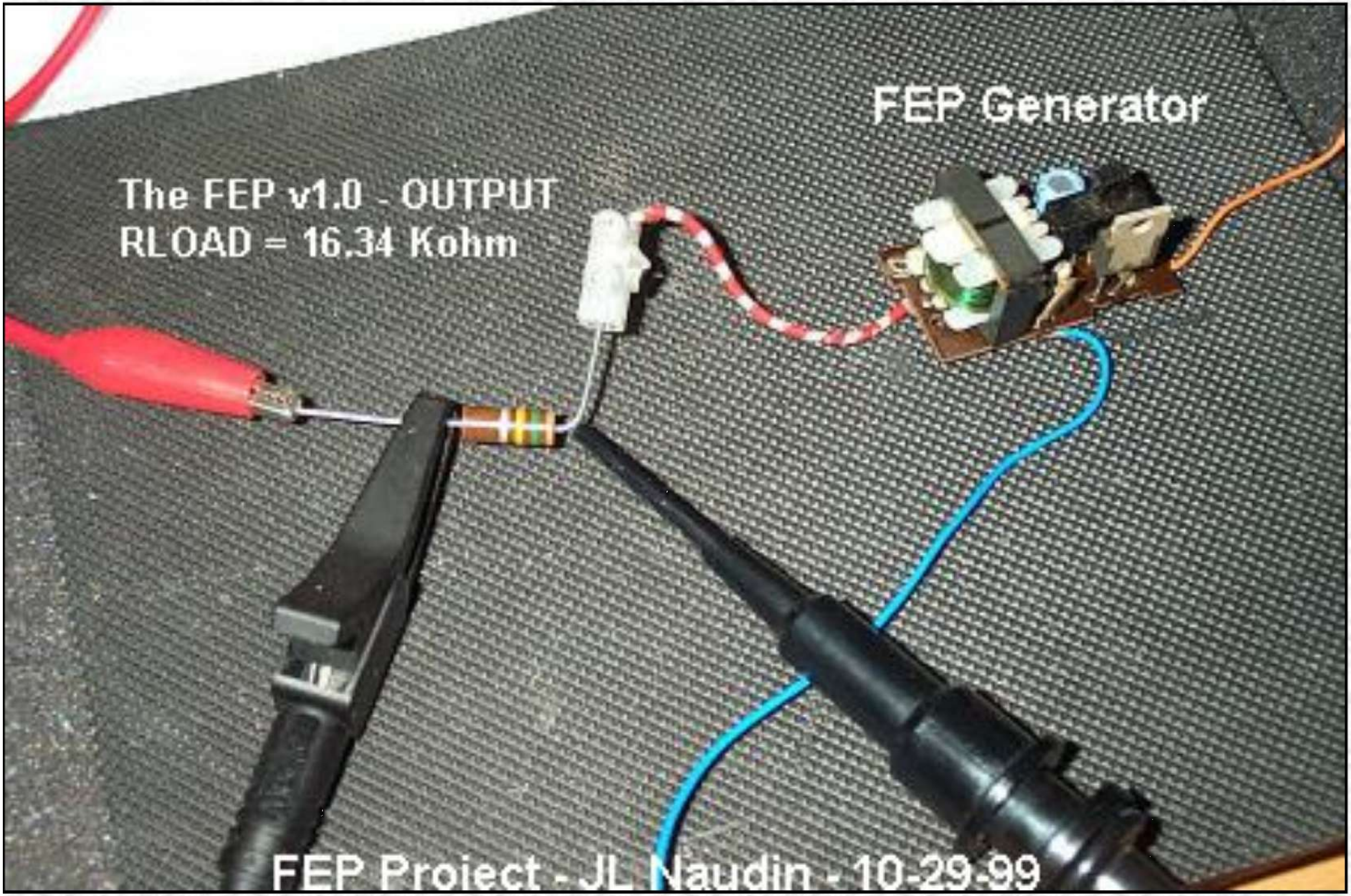
***JLN Comments*:**

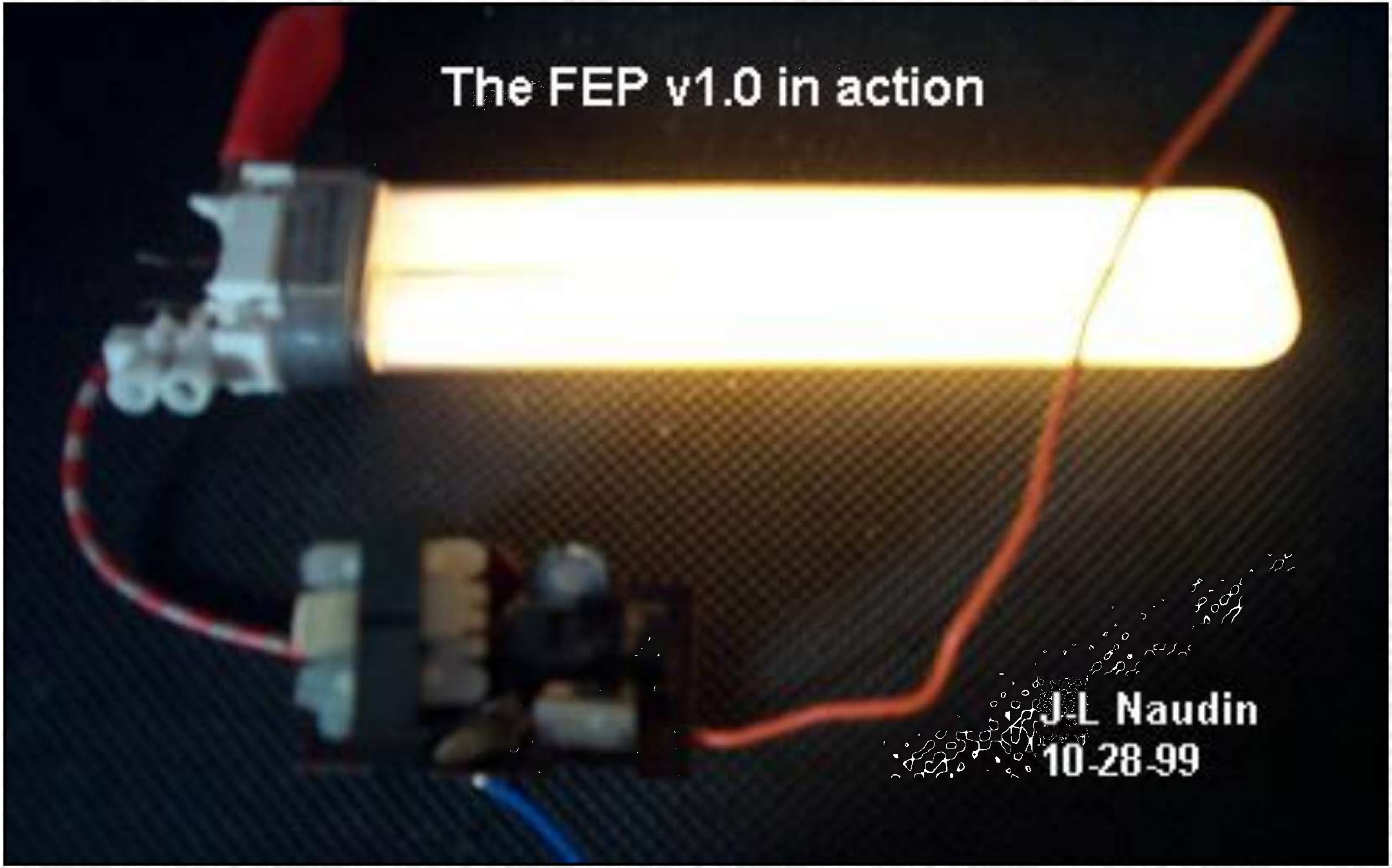
As you may notice in the diagram above, the measured output power accross the resistor was 801 mW RMS for 8.6 Watt Peak, the most interesting thing to observe is that THE INPUT POWER DROPS of 226 mW while 801 mW is generated at the output.

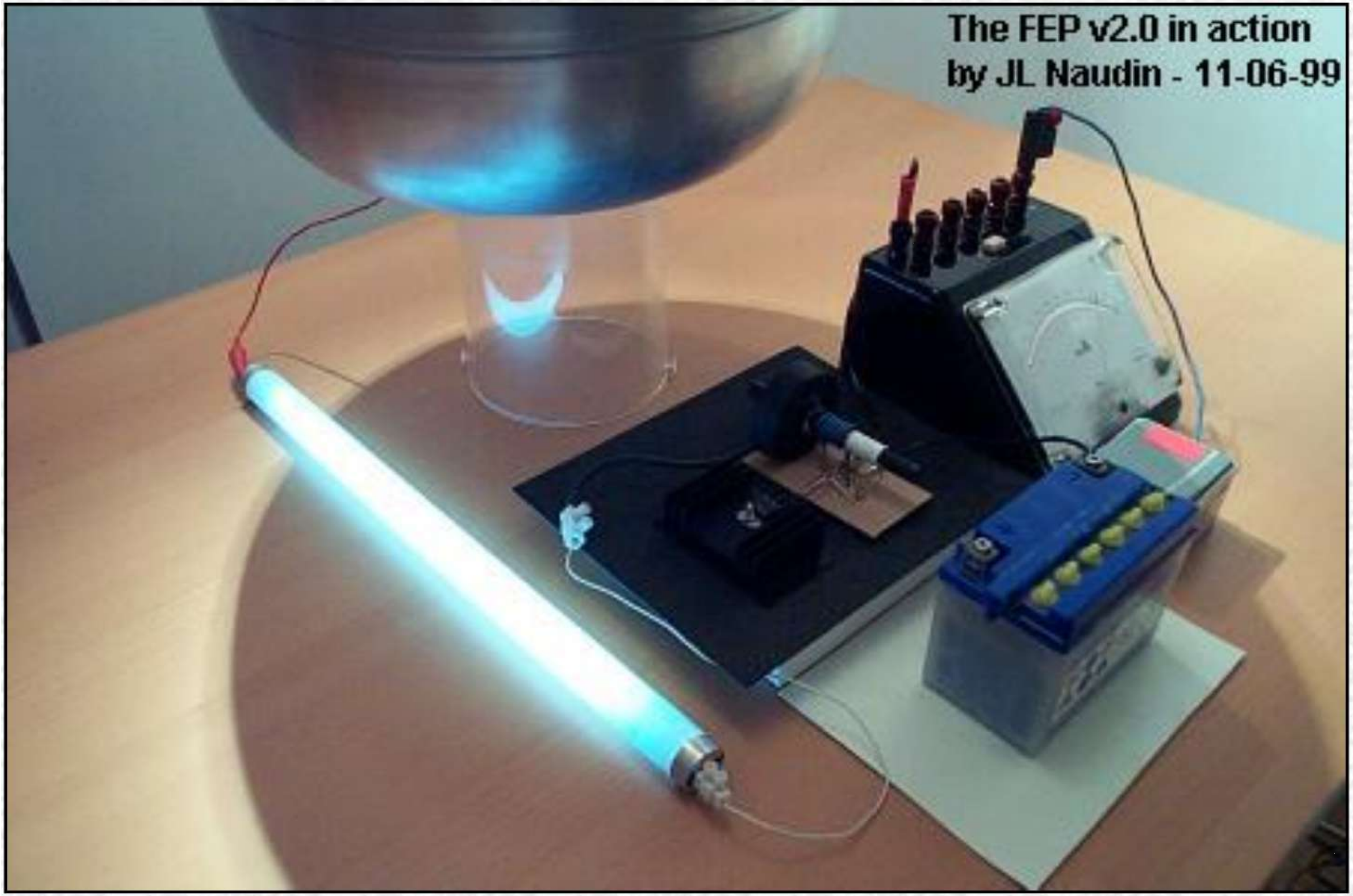
See also :


The FEP
Generator
Starter
Removed
The FEP v1.0 by JL Naudin - 10-28-99
Email: JNaudin509@aol.com


To the spherical capacitor
The 9 Watt neon tube
OSRAM Dulux S
9W/41-827
The FEP generator
+12V (from the lead battery 4 Ah)
to the -12V
The FEP v1.0 by JL Naudin - 10-28-99
Email: JNaudin509@aol.com

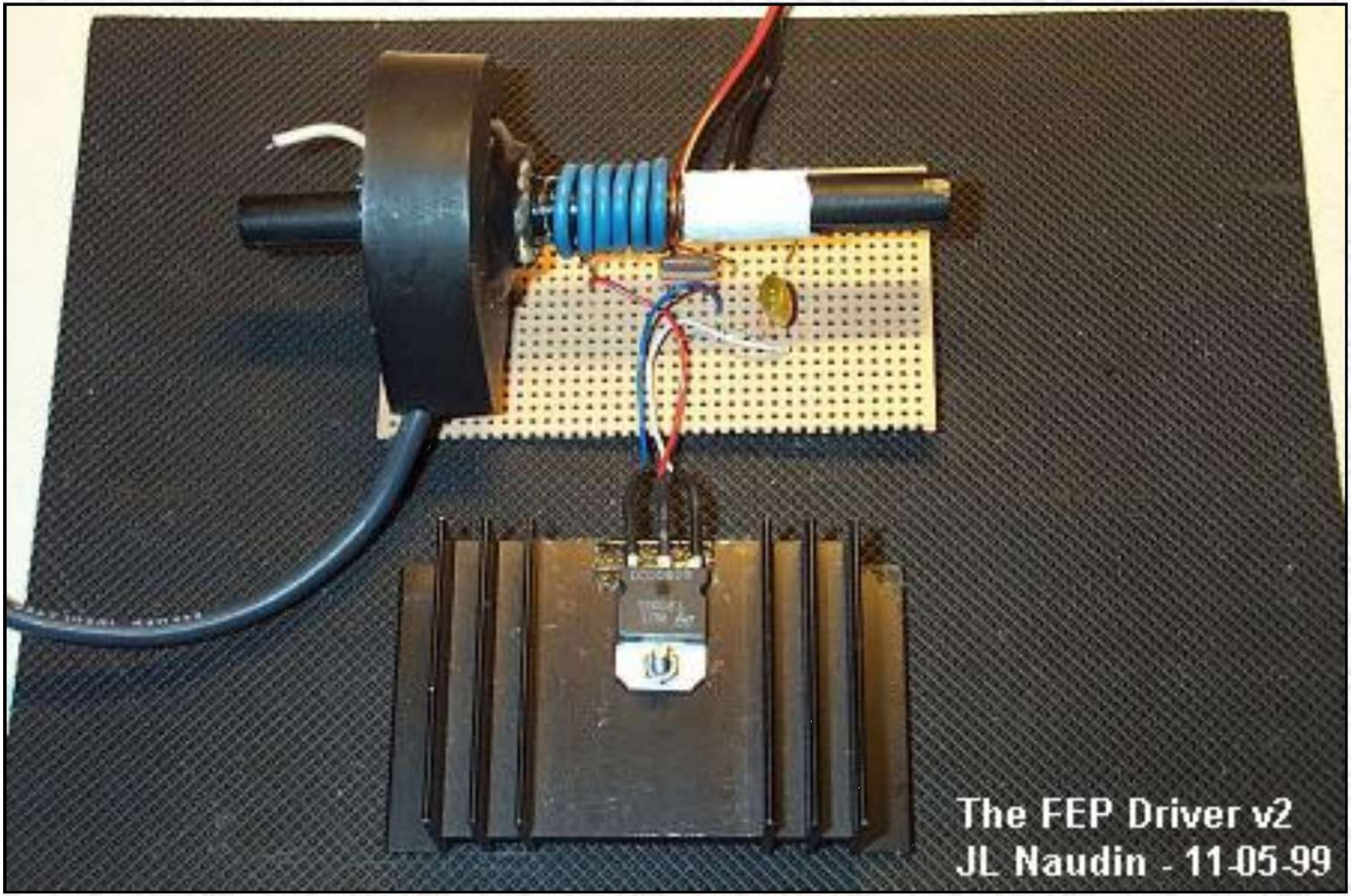

FEP Generator
The FEP v1.0 - OUTPUT
RLOAD = 16.34 Kohm
FEP Project - JL Naudin - 10-29-99


The FEP v1.0 in action
J-L Naudin
10-28-99

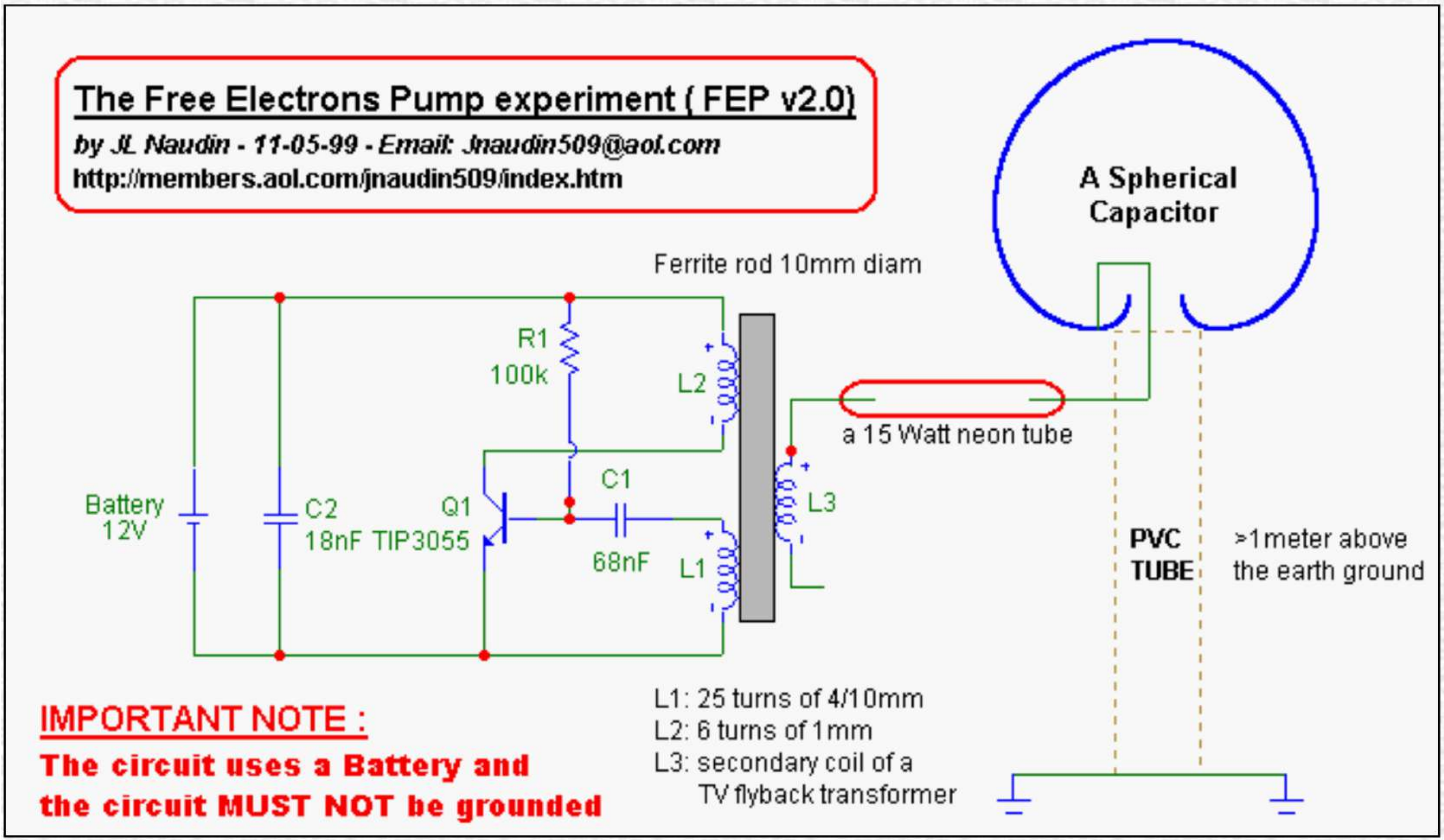


The Free Electrons Pump (FEP v2.0)

By Jean-Louis Naudin



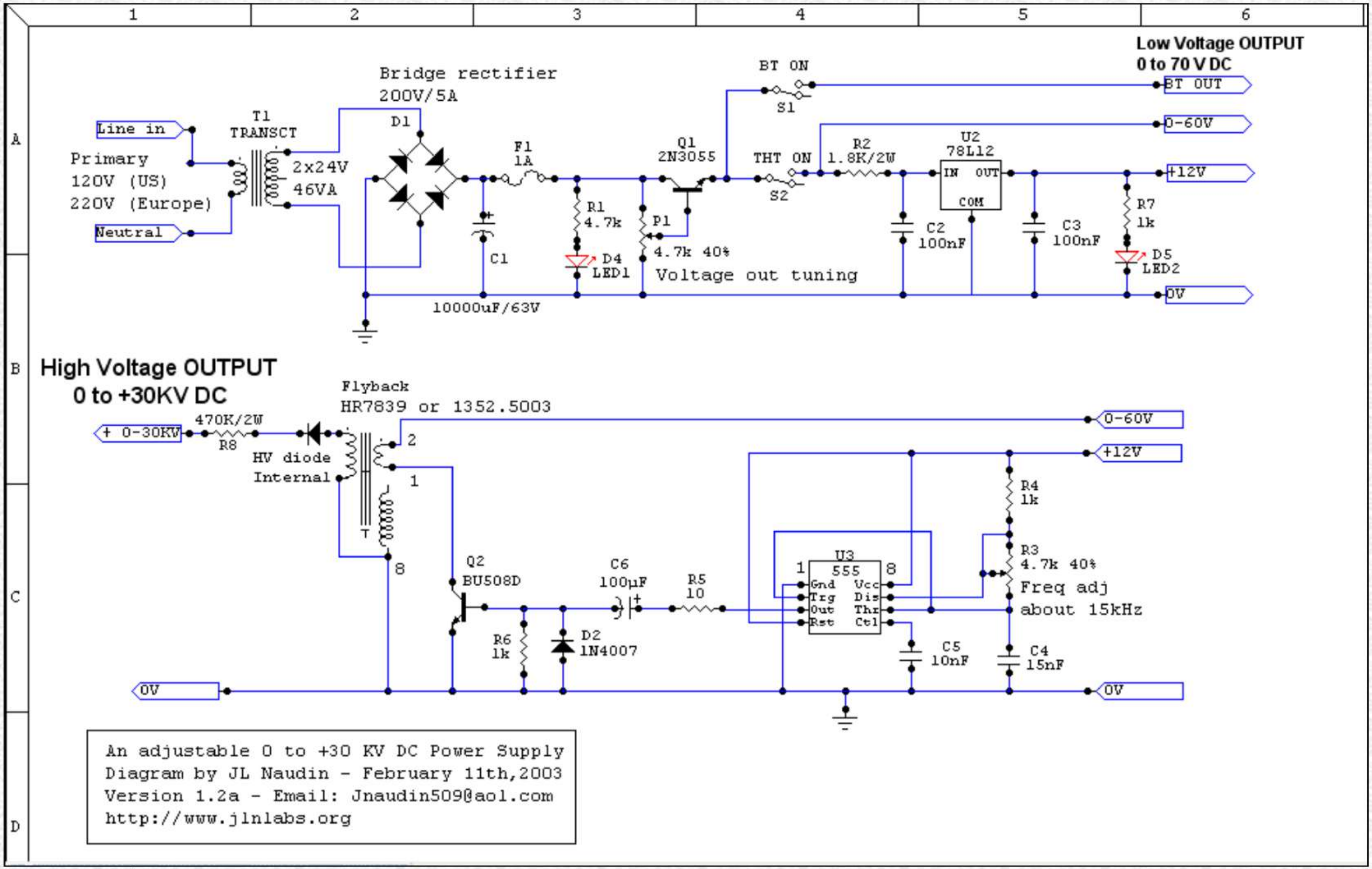
<u>The New FEP generator v2.0</u>



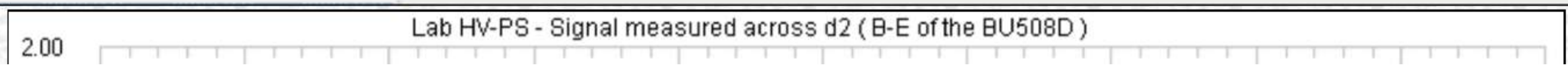
The Free Electrons Pump experiment (FEP v2.0)
by JL Naudin - 11-05-99 - Email: Jnaudin509@aol.com
http://members.aol.com/jnaudin509/index.htm
A Spherical Capacitor
Ferrite rod 10mm diam
R1 100k
L2
a 15 Watt neon tube
C1
Battery 12V
C2 18nF
Q1 TIP3055
68nF
L1
L3
PVC TUBE
>1meter above the earth ground
L1: 25 turns of 4/10mm
L2: 6 turns of 1mm
L3: secondary coil of a TV flyback transformer
IMPORTANT NOTE :
The circuit uses a Battery and the circuit MUST NOT be grounded

You will find in this document a very useful High Voltage Power supply (Lab HV-PS) diagram for your personal laboratory experiments. This is a dual outpout power supply :
- the first output is a Low Voltage output fully tunable between 0 to 70 V DC,
- the second output is a High Voltage output fully tunable between 0 to 30 KV DC

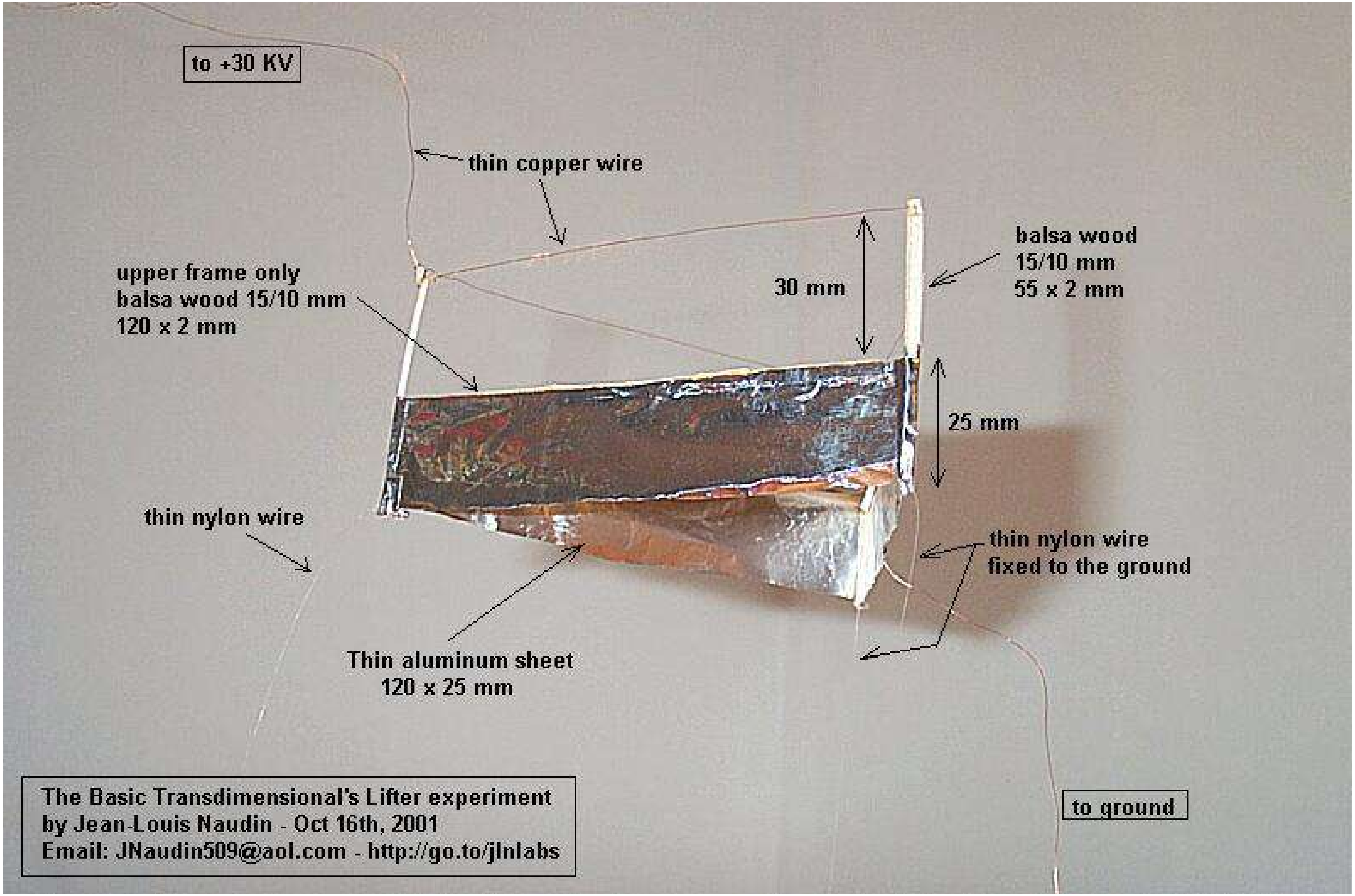
This Lab HV-PS is able to lift off a Lifter v2.0 without problem at a voltage about 21 KV. This allows you to conduct some interesting experiments about the Lifter hovering by tuning the HV output level.

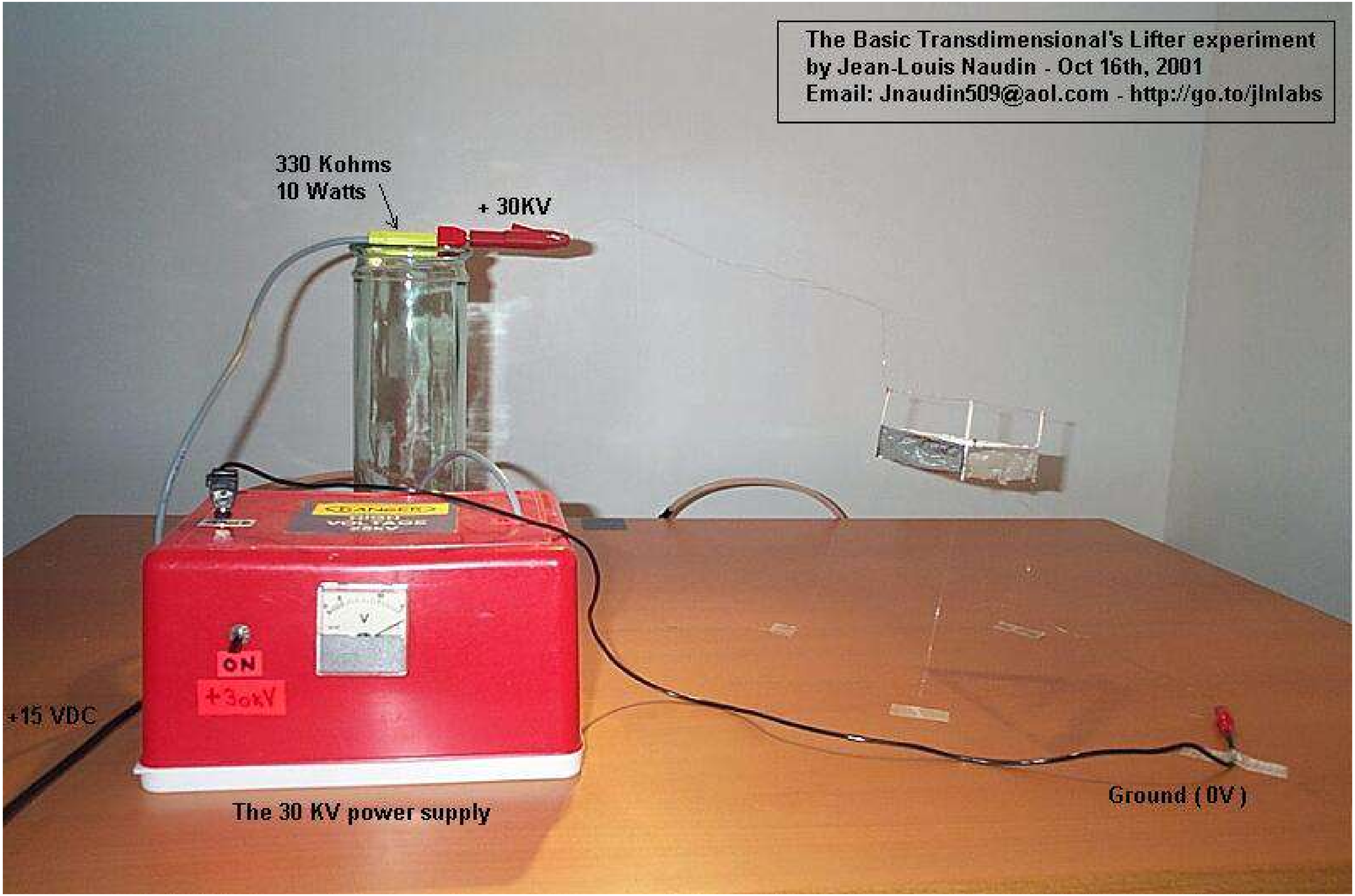


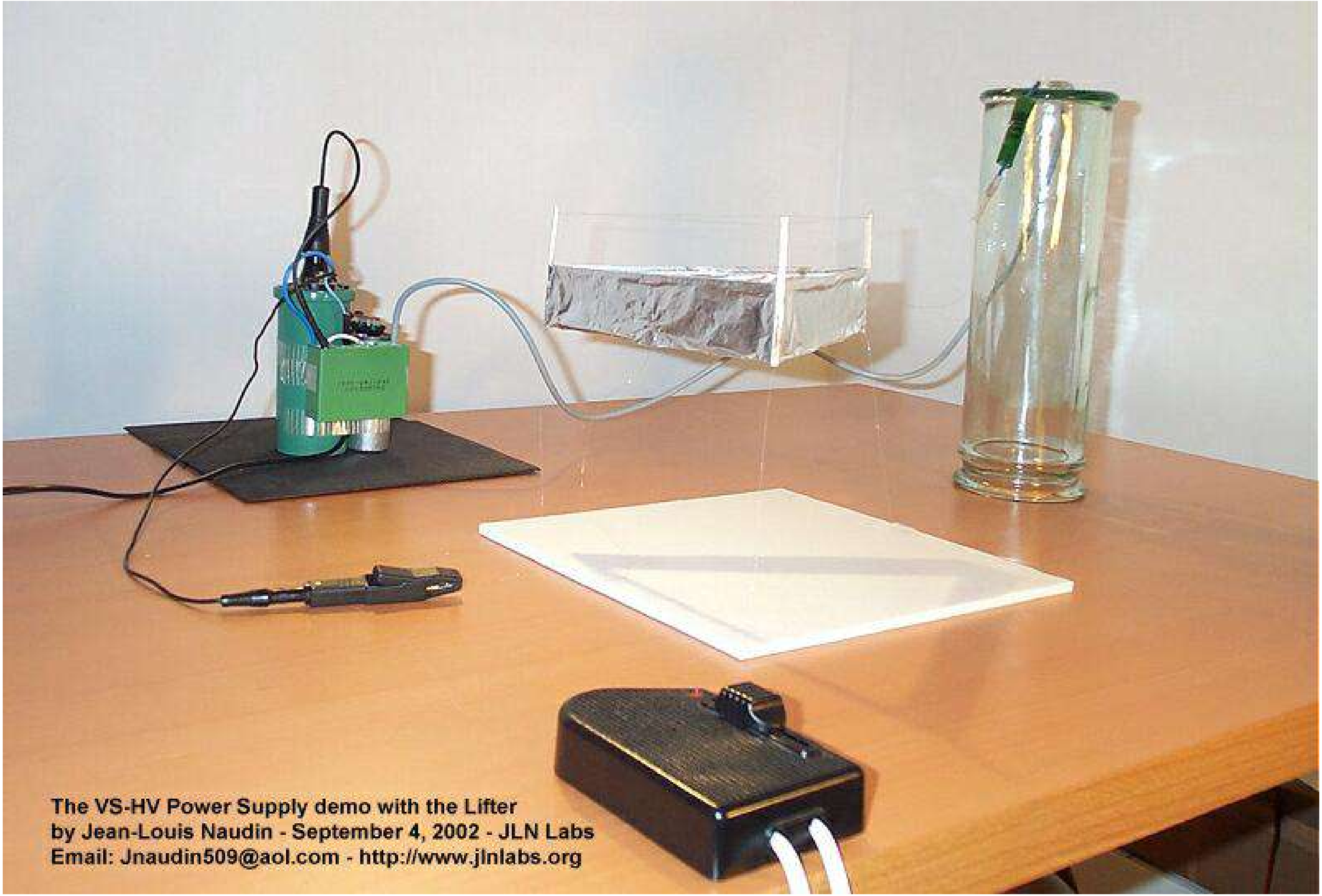
Low Voltage OUTPUT
0 to 70 V DC
Bridge rectifier
200V/5A
BT ON
BT OUT
S1
Line in
T1
TRANSCT
D1
0-60V
Primary
120V (US)
220V (Europe)
2x24V
46VA
F1
1A
Q1
2N3055
THT ON
R2
1.8K/2W
U2
78L12
IN
OUT
COM
+12V
S2
Neutral
R1
4.7k
P1
4.7k 40%
Voltage out tuning
C2
100nF
C3
100nF
R7
1k
D4
LED1
D5
LED2
C1
0V
10000uF/63V
High Voltage OUTPUT
0 to +30KV DC
Flyback
HR7839 or 1352.5003
470K/2W
+ 0-30KV
R8
HV diode
Internal
0-60V
+12V
R4
1k
R3
4.7k 40%
Freq adj
about 15kHz
Q2
BU508D
C6
100µF
R5
10
U3
555
Gnd
Trg
Out
Rst
Vcc
Dis
Thr
Ctl
R6
1k
D2
1N4007
C5
10nF
C4
15nF
0V
0V
An adjustable 0 to +30 KV DC Power Supply
Diagram by JL Naudin - February 11th,2003
Version 1.2a - Email: Jnaudin509@aol.com
http://www.jlnlabs.org



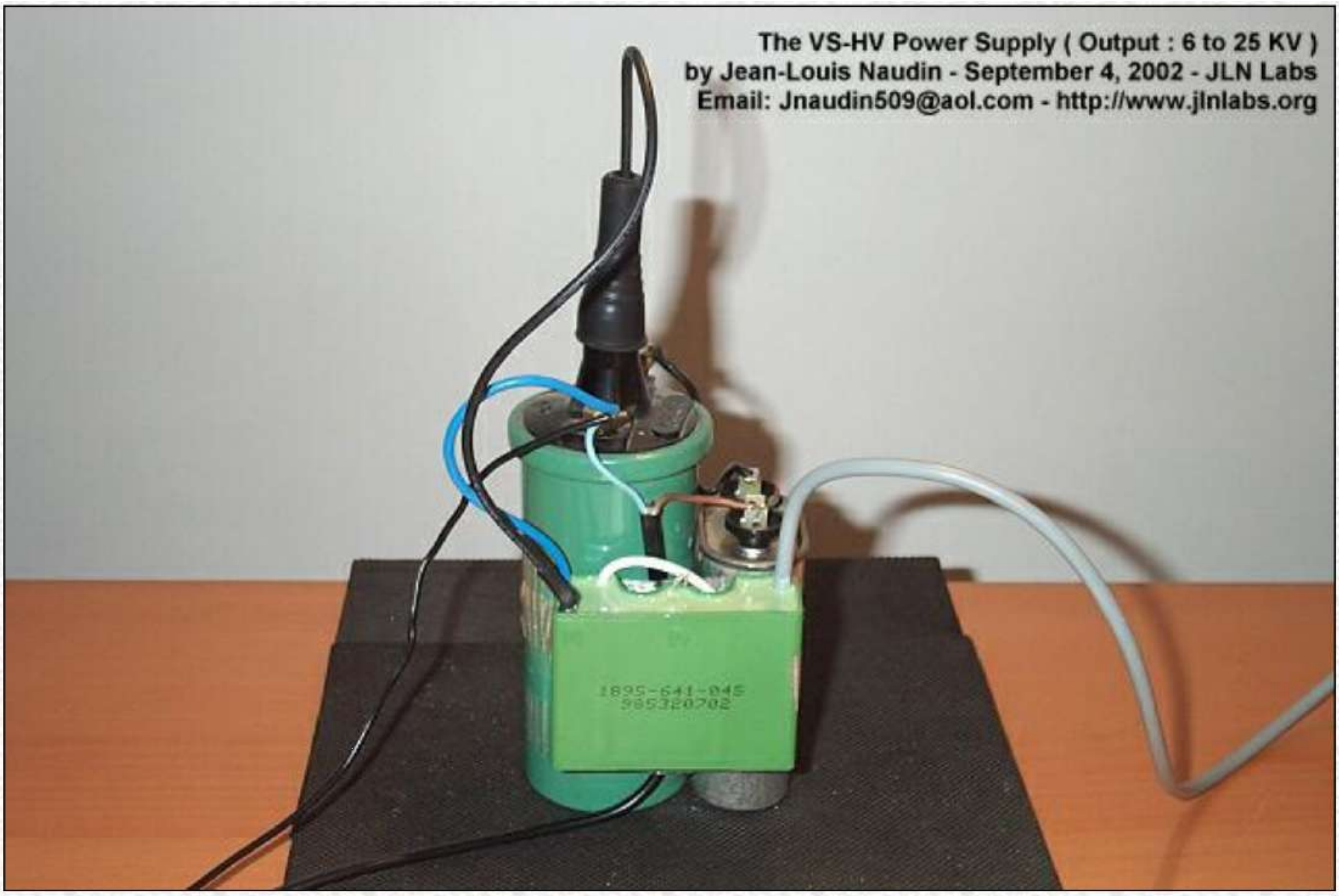
Lab HV-PS - Signal measured across d2 (B-E of the BU508D)
2.00

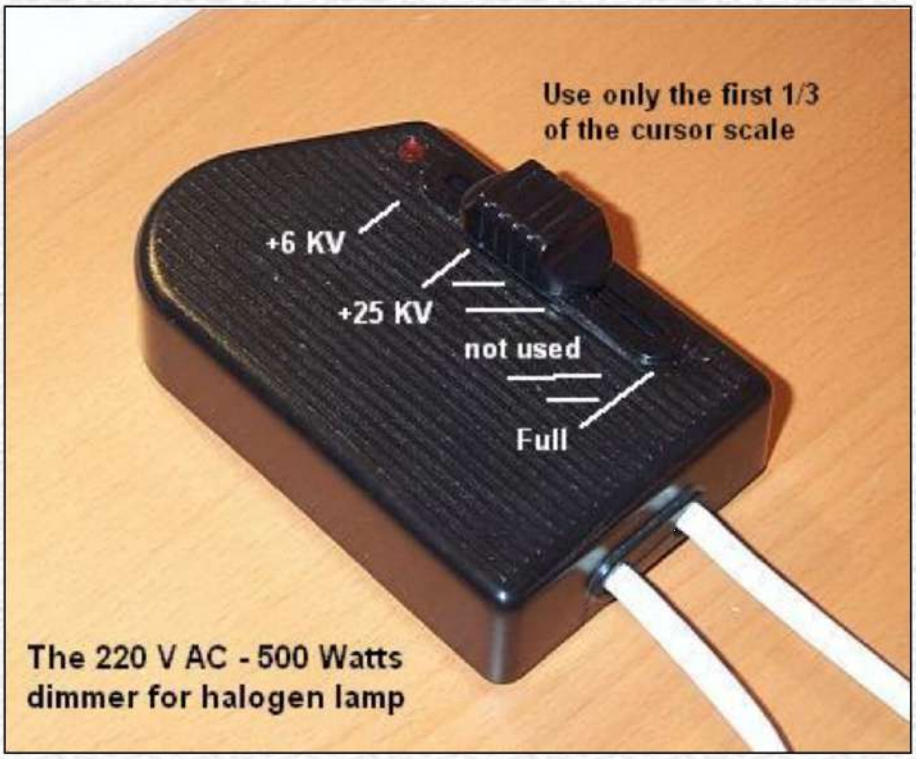

to +30 KV
thin copper wire
upper frame only
balsa wood 15/10 mm
120 x 2 mm
30 mm
balsa wood
15/10 mm
55 x 2 mm
25 mm
thin nylon wire
thin nylon wire
fixed to the ground
Thin aluminum sheet
120 x 25 mm
The Basic Transdimensional's Lifter experiment
by Jean-Louis Naudin - Oct 16th, 2001
Email: JNaudin509@aol.com - http://go.to/jlnlabs
to ground


The Basic Transdimensional's Lifter experiment
by Jean-Louis Naudin - Oct 16th, 2001
Email: Jnaudin509@aol.com - http://go.to/jlnlabs
330 Kohms
10 Watts
+ 30KV
ON
+30kV
+15 VDC
The 30 KV power supply
Ground (0V)



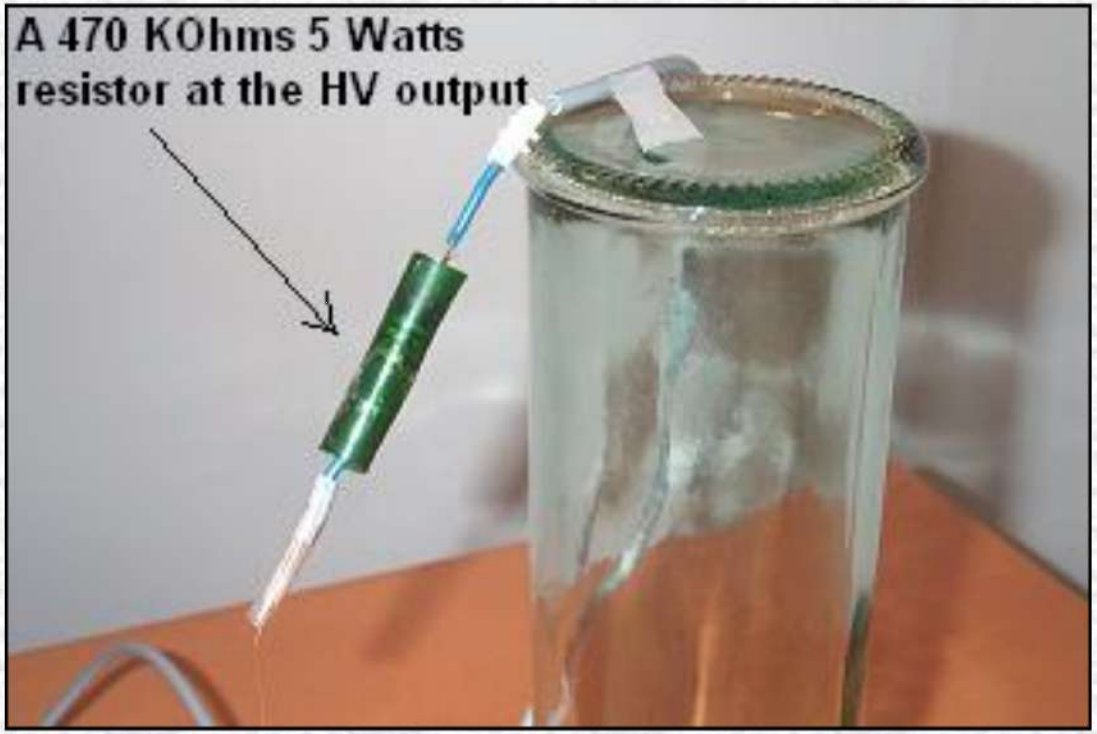
The VS-HV Power Supply demo with the Lifter
by Jean-Louis Naudin - September 4, 2002 - JLN Labs
Email: Jnaudin509@aol.com - http://www.jlnlabs.org





The HV output can be easily adjusted bewteen 6 to 25 KV with the halogen lamp dimmer.

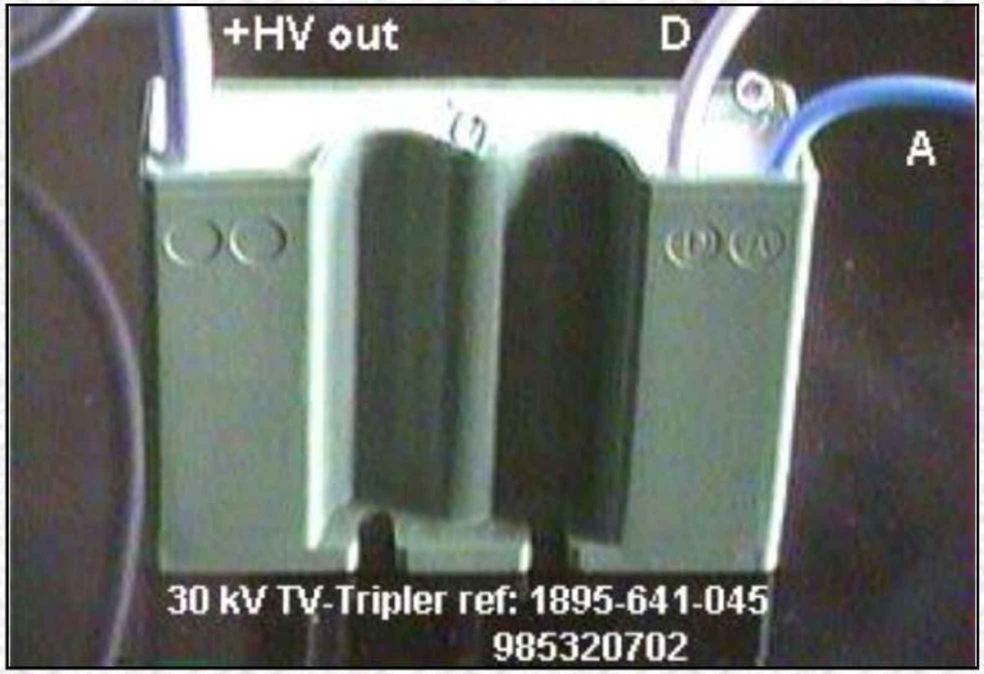
The HV output can be easily adjusted bewteen 6 to 25 KV with the halogen lamp dimmer. Use only the first 1/3 of the cursor scale.

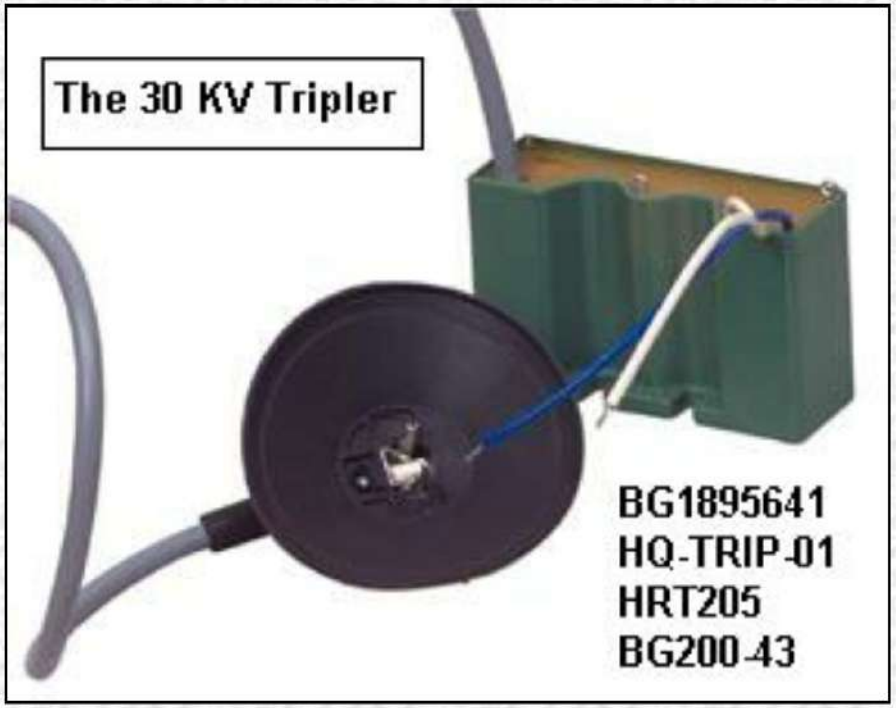


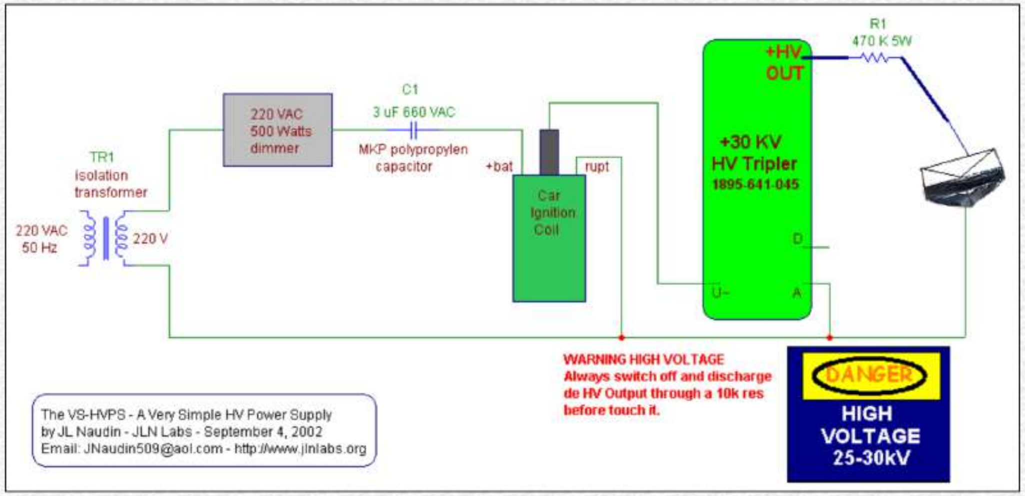
A 470 KOhms 5 Watts resistor is required to proect the HV output of the tripler

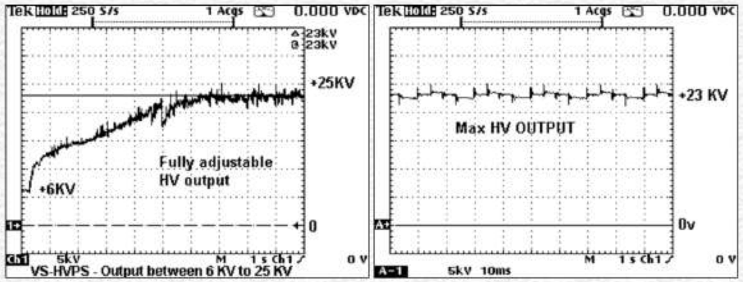
A 470 KOhms 5 Watts resistor is required to proect the HV output of the tripler

The car ignition coil used is a Ducellier (ref : 2790A) for a 12 V battery.



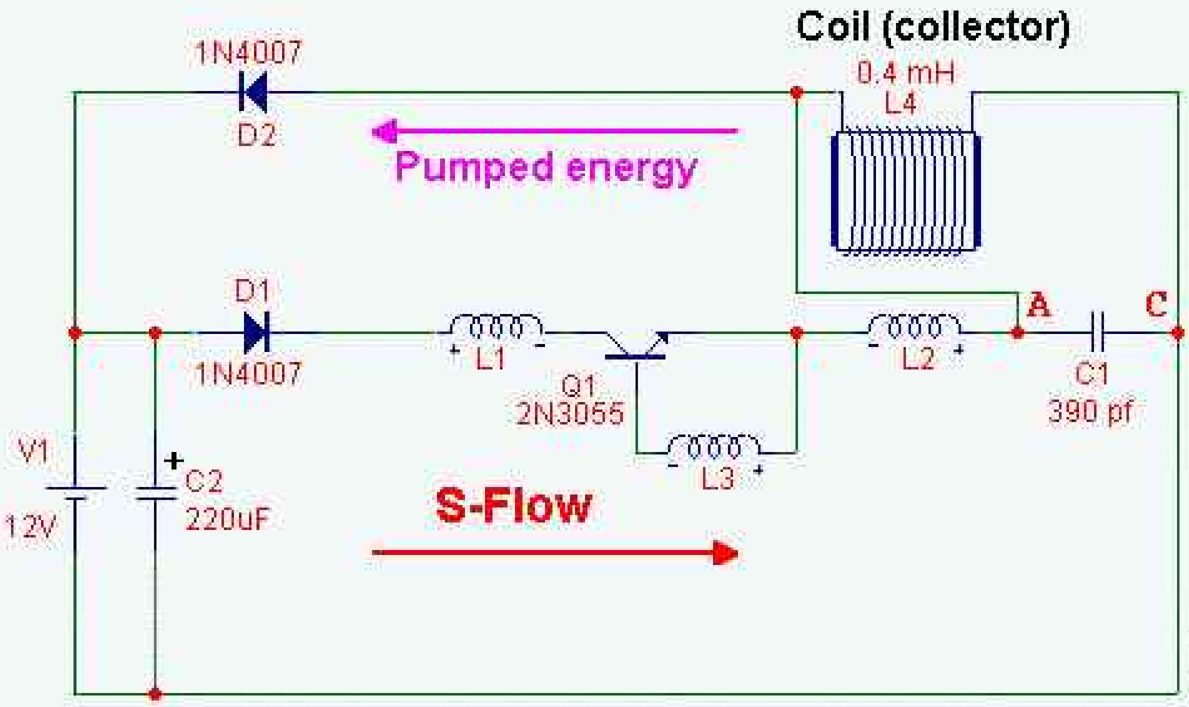




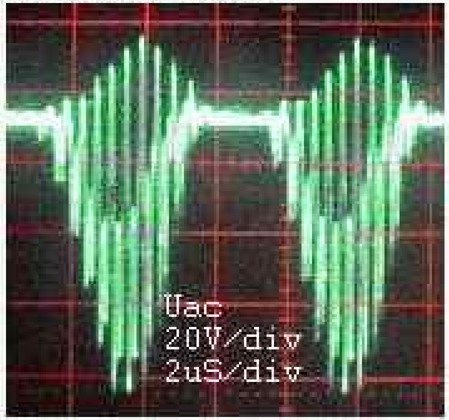


BE CAREFUL, USE EXTREME CAUTION !!!, this device use **High Voltage**, **ALWAYS switch off the input** and **discharge** the output to the ground through 10k/2W resistor **before** touch it. **These plans are not intended for the inexperienced**. User of this document should be very carefull and experienced in High-Voltage electronics to try anything out ! If you do it the risk of any results is just yours. I take no responsibility of anything that might happen.

ATTENTION !!!, Faites preuve d'une extrême prudence. Vous manipulez ici de la **Haute-Tension**, **TOUJOURS arrêter** puis **déconnecter** votre alimentation ou le moniteur et **décharger la sortie Haute Tension à travers une résistance de 10Kohms/2W avant toute manipulation.**. **Les plans et les conseils présentés ici, ne sont pas destinés à des débutants**. Vous devrez procéder avec soin et prudence et avoir l'habitude de manipuler de la Haute-Tension avant d'envisager une telle expérience ! Si vous décider de réaliser cette expérience, ceci est à votre propre risque et je décline toute responsabilité en ce qui concerne les éventuels dommages matériels ou physiques causés.



L4 : diam 49 mm,
length 60 mm,
100 turns
#22 magnet wire
Air core
R(L4)=3.2 ohms



The set of the bifilar coil L1,L2 is put into the 'collector' coil L4.

2N5301 : Vcb/Vce 40V, Veb 5V,ICmax 30A, Tj 200C,Ptot 200WC, ftmin 2M, hfe 15/60 (Ic 15A)
2N3055 : Vcb/Vce 100V/60V, Veb 7V,ICmax 15A, Tj 200C,Ptot 115WC, ftmin 200K, hfe 20/70 (Ic 4A)
Q1 : mounted with radiator

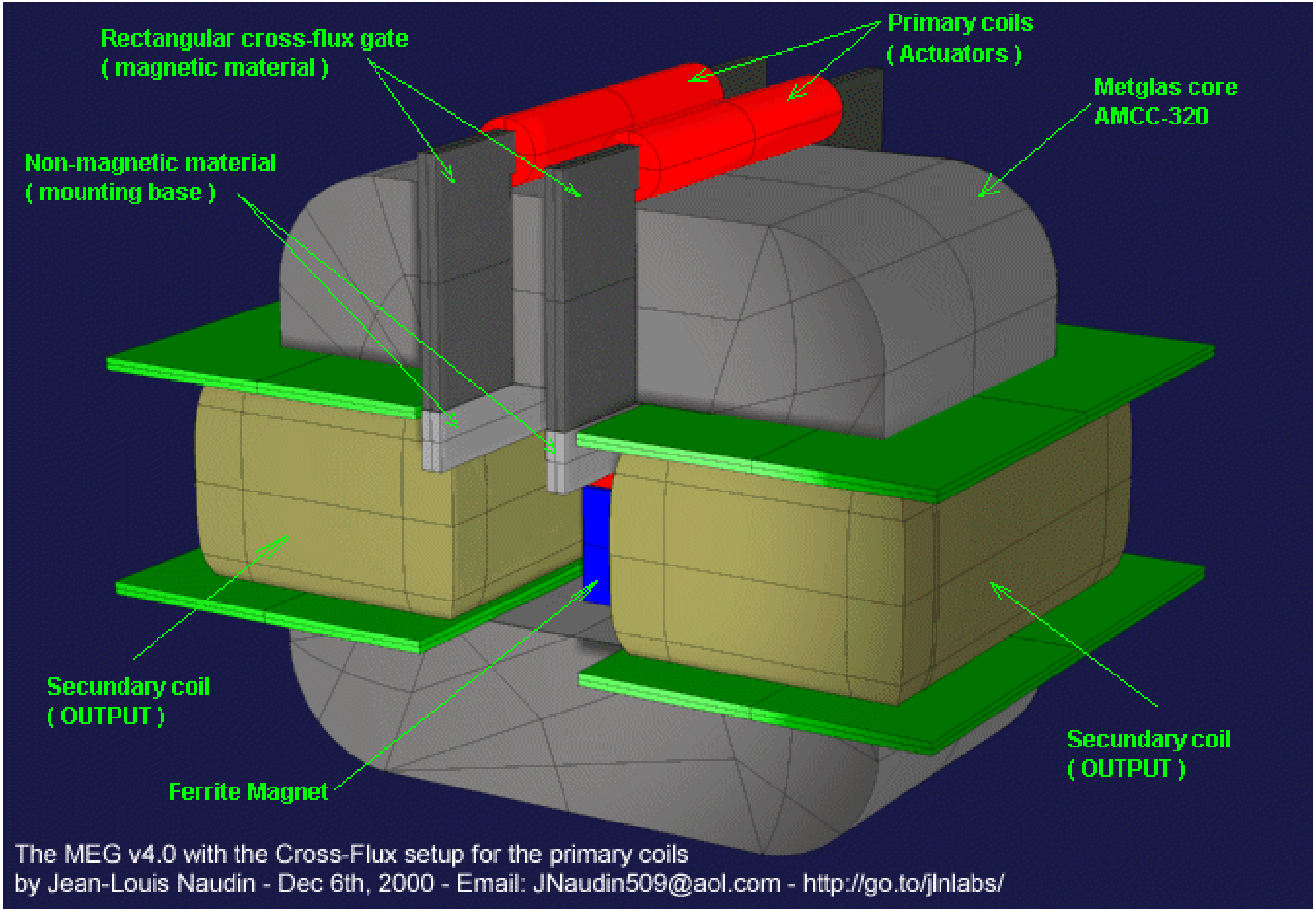
The T.E.P. (Time Energy Pump) - V3.0

By Jean-louis Naudin - Email : JNaudin509@aol.com
08/19/97

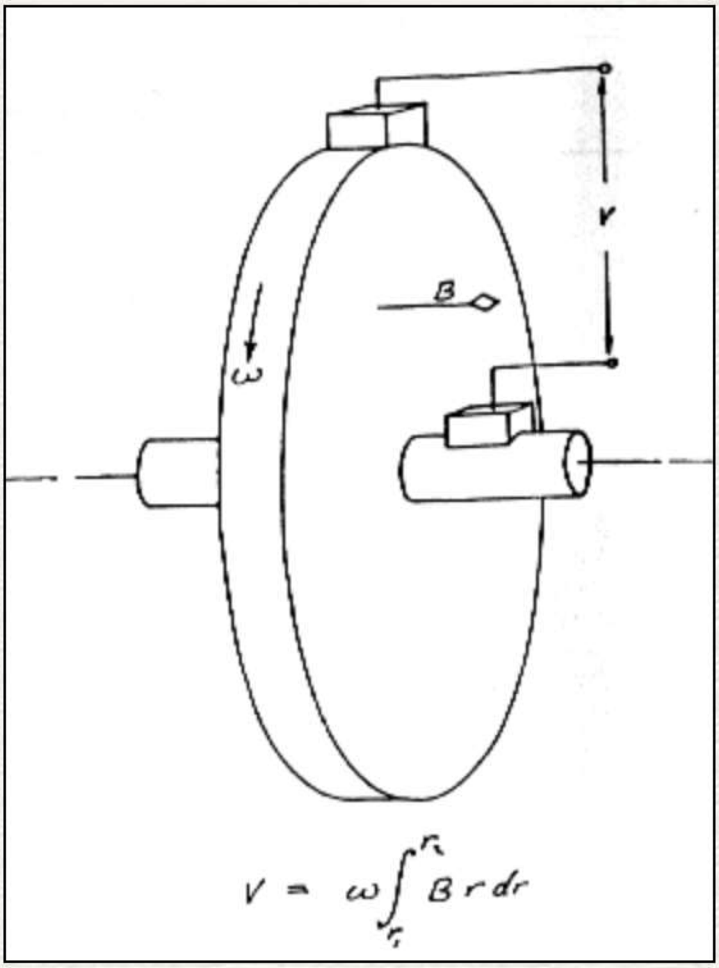
Notes : The polarity of the L1,L2 L3 is VERY IMPORTANT
Flux of L1 cancels the flux of L2

L1,L2 BIFILAR COILS (interweaved)
made with 11.5 m of 5/10 magnet wire #24
on a 20 mm cardboard tube (length 190 mm)

L3 : feedback coil
250 turns of 5/10 mm magnet wire #24

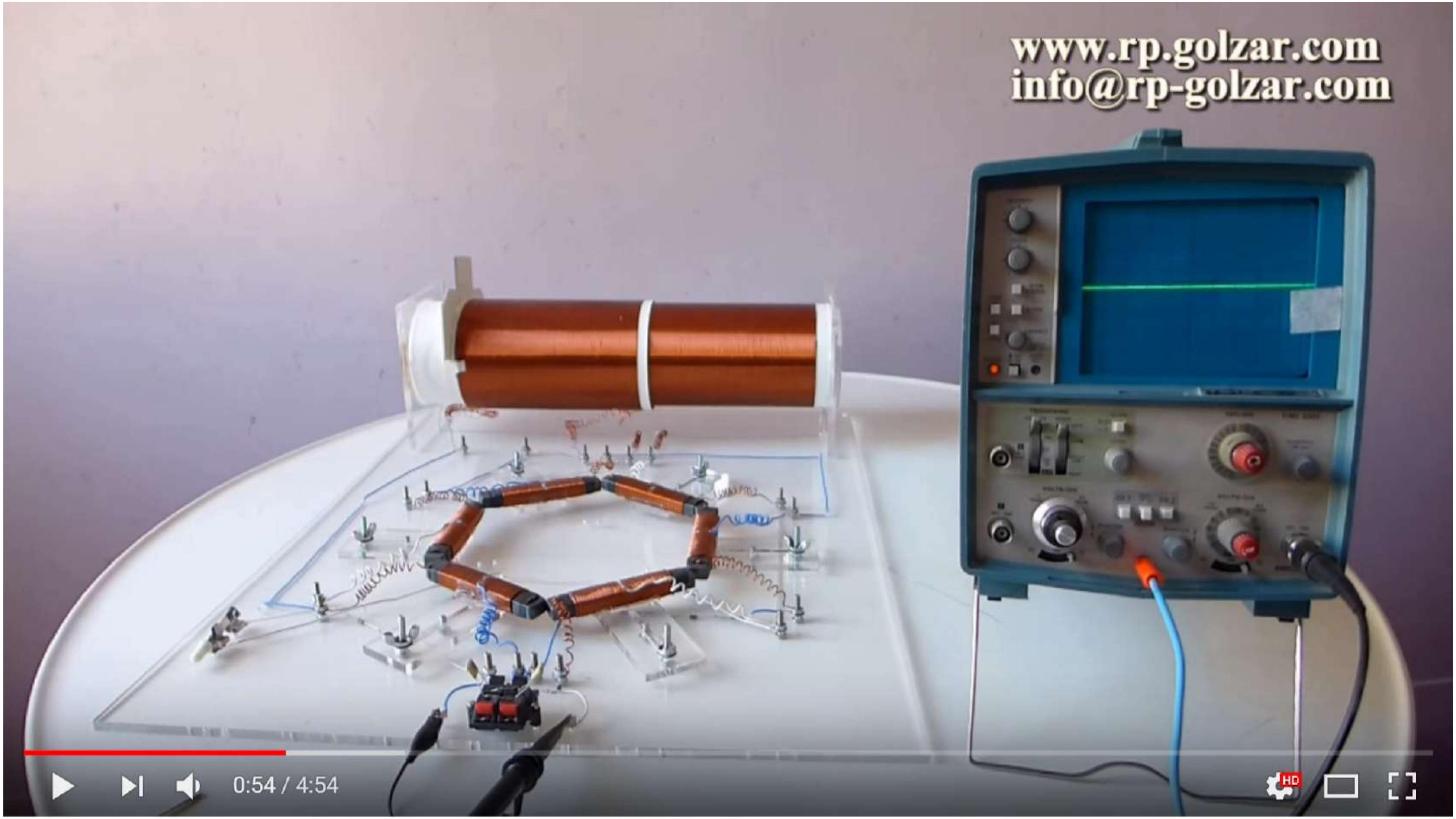


Rectangular cross-flux gate
(magnetic material)
Primary coils
(Actuators)
Metglas core
AMCC-320
Non-magnetic material
(mounting base)
Secundary coil
(OUTPUT)
Ferrite Magnet
Secundary coil
(OUTPUT)
The MEG v4.0 with the Cross-Flux setup for the primary coils
by Jean-Louis Naudin - Dec 6th, 2000 - Email: JNaudin509@aol.com - http://go.to/jlnlabs/

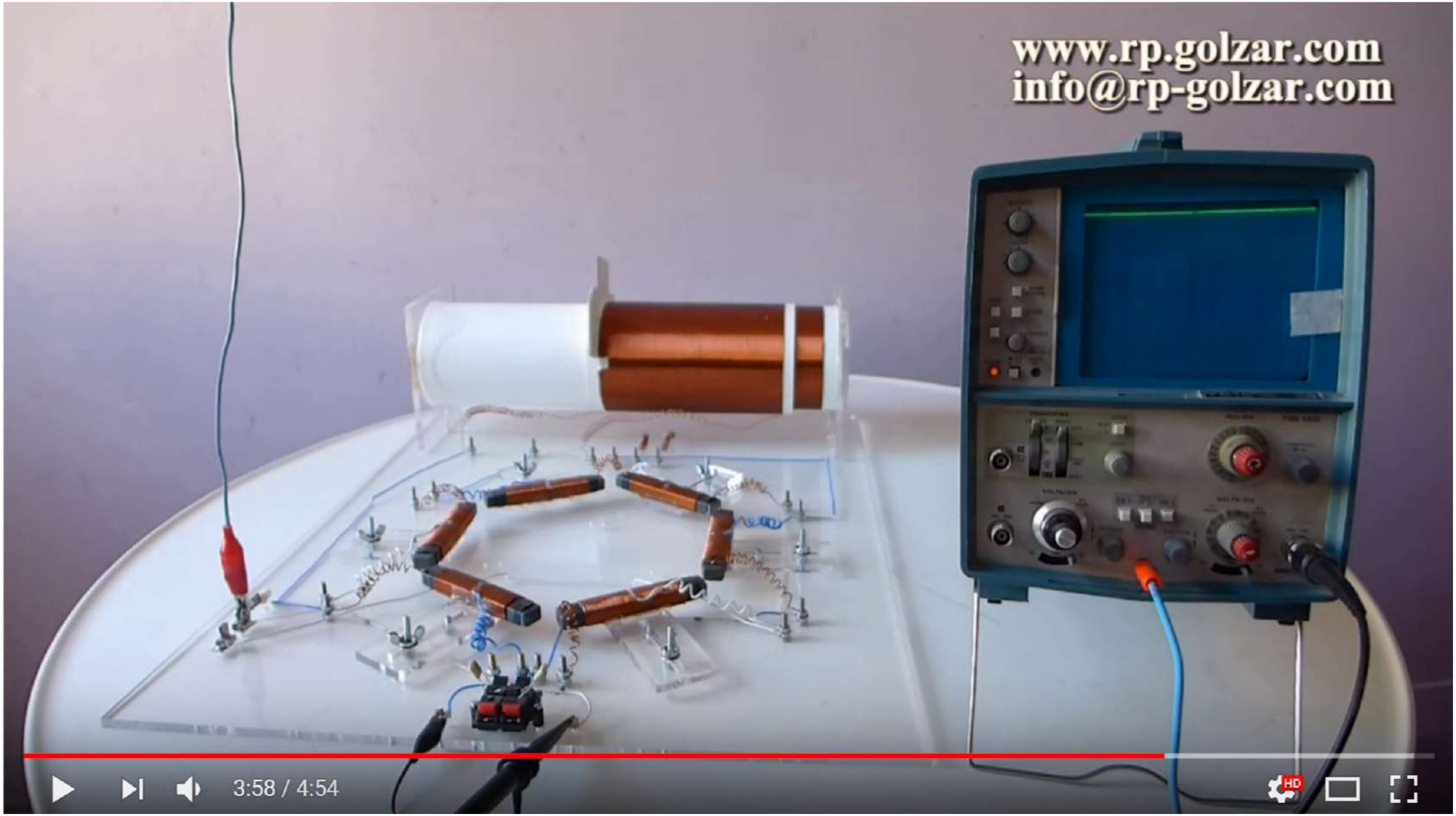

B
V
ω
$V = \omega \int_{r_1}^{r_2} B\, r\, dr$

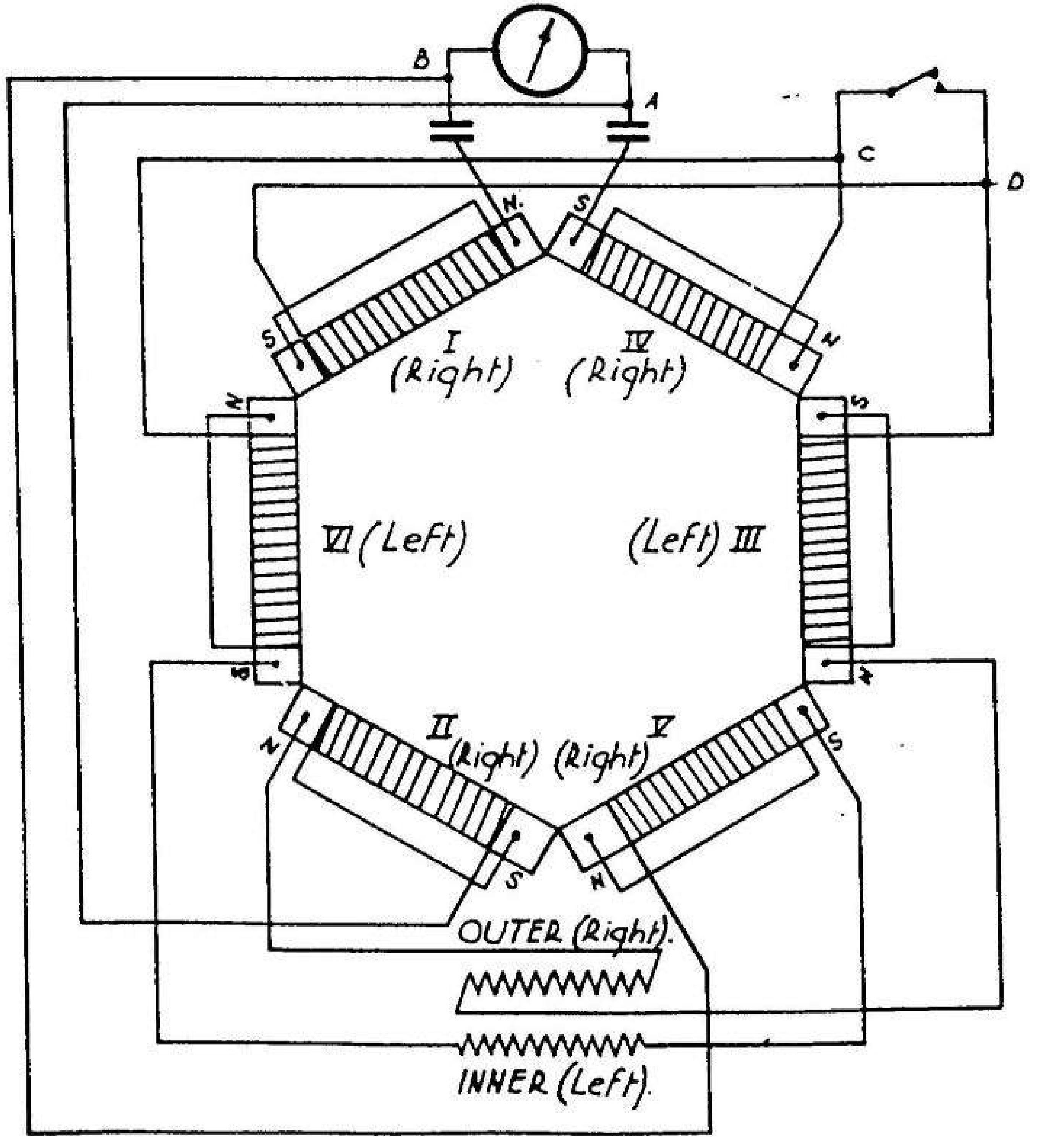

Soft Iron shell
N
Ferrite Magnet
outer diam : 70 mm
inner diam : 33 mm
8 mm thick
mA meter
8 mm bolt
A simple Homopolar Generator - V1.0 - 13 April 97
By Jean-Louis Naudin - Email : JNaudin509@aol.com
At 2600 RPM - I = 1.5 mA, E = 0.5 V


HARDWARE



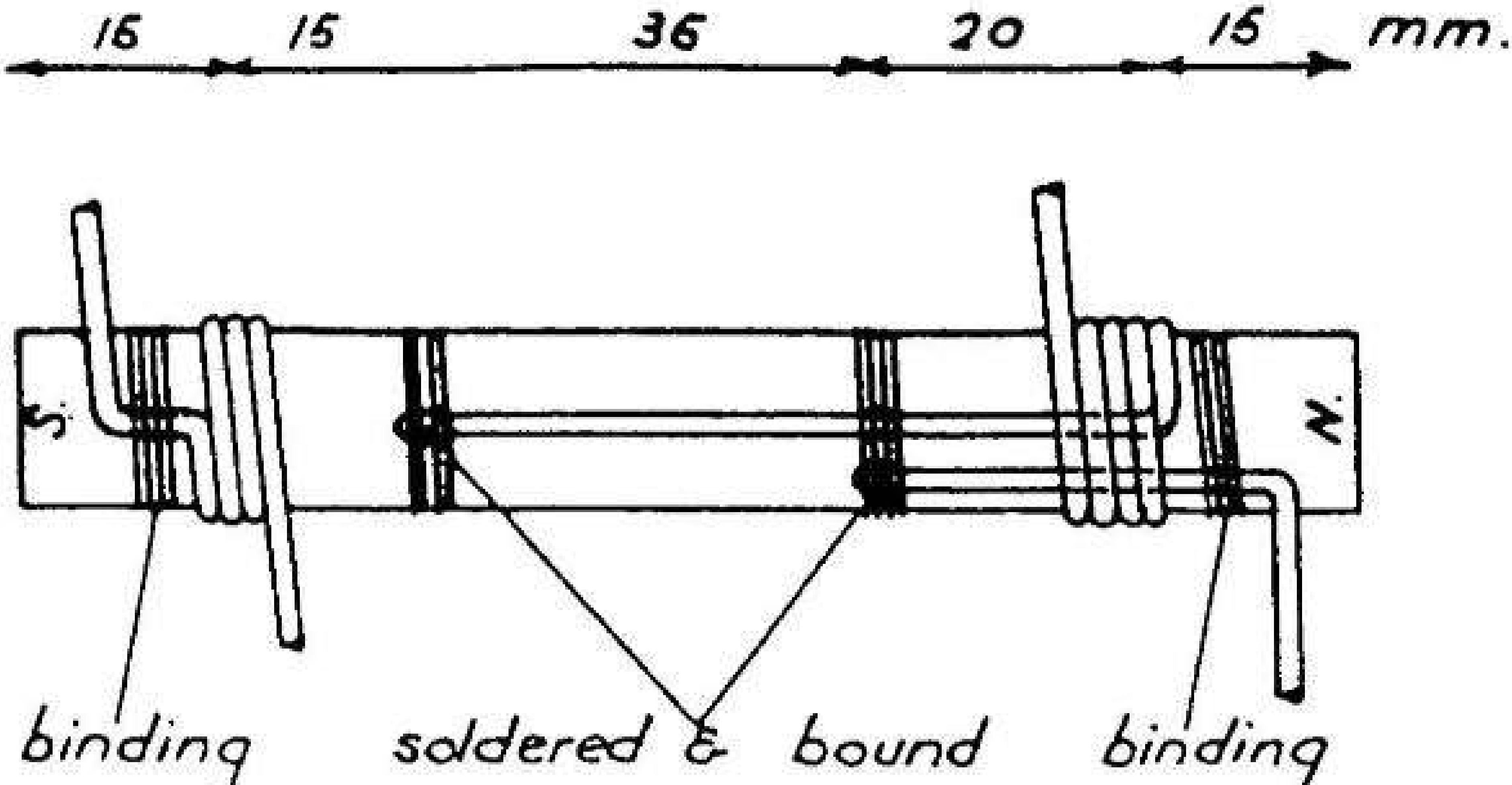
Free Energy Device 2015


www.rp.golzar.com
info@rp-golzar.com
3:58 / 4:54
HD



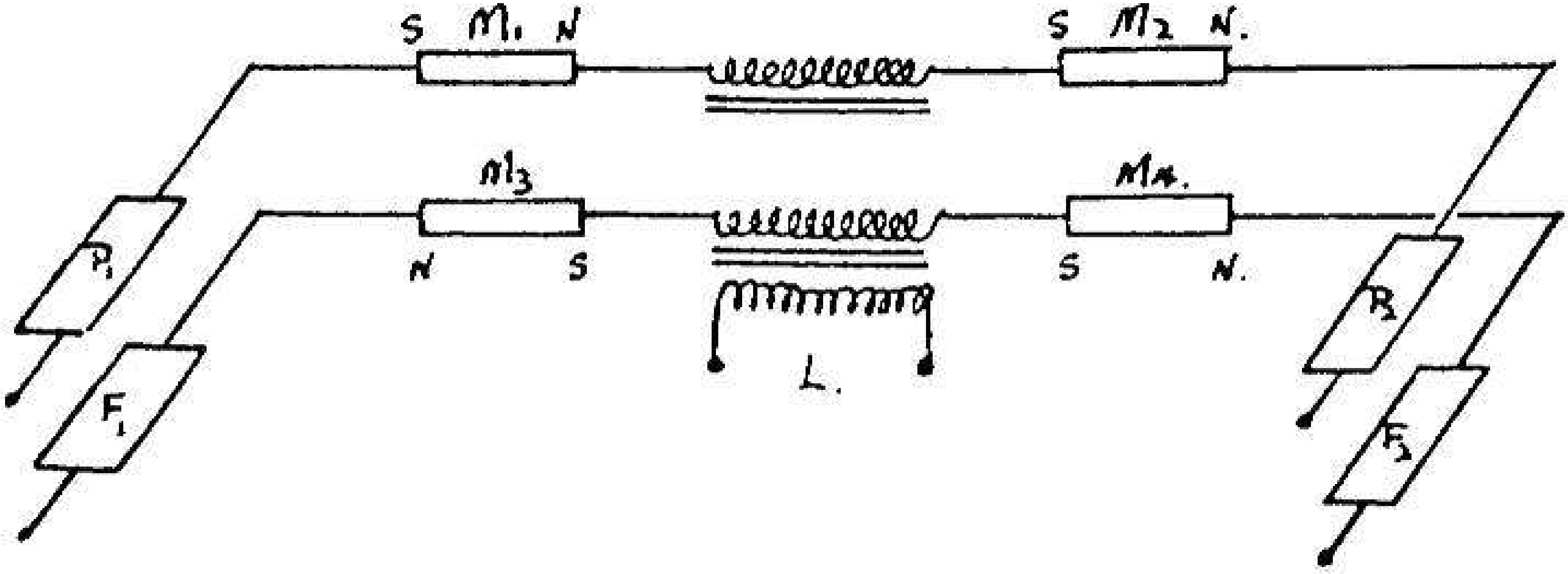
B
A
C
D
N.
S
S
N
I
(Right)
IV
(Right)
N
S
VI (Left)
(Left) III
S
N
N
S
II
(Right)
(Right)
V
S
N
OUTER (Right).
INNER (Left).

Fig: 2.



Note: Paper insulation between magnet and coil.

Fig: 1.


S
M1
N
S
M2
N.
M3
N
S
M4.
S
N.
L.
P1
F1
P2
F2

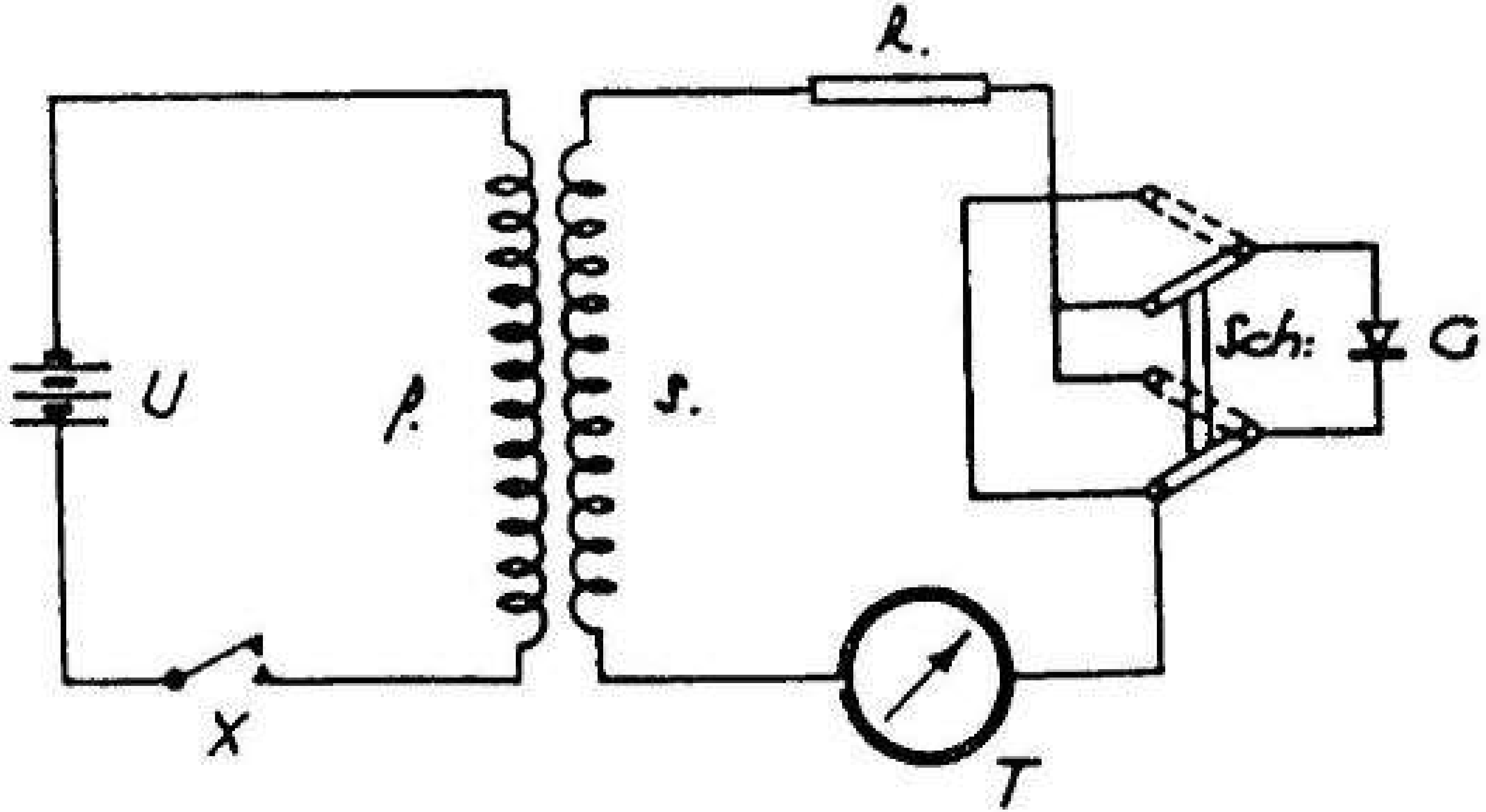


Fig. 4.

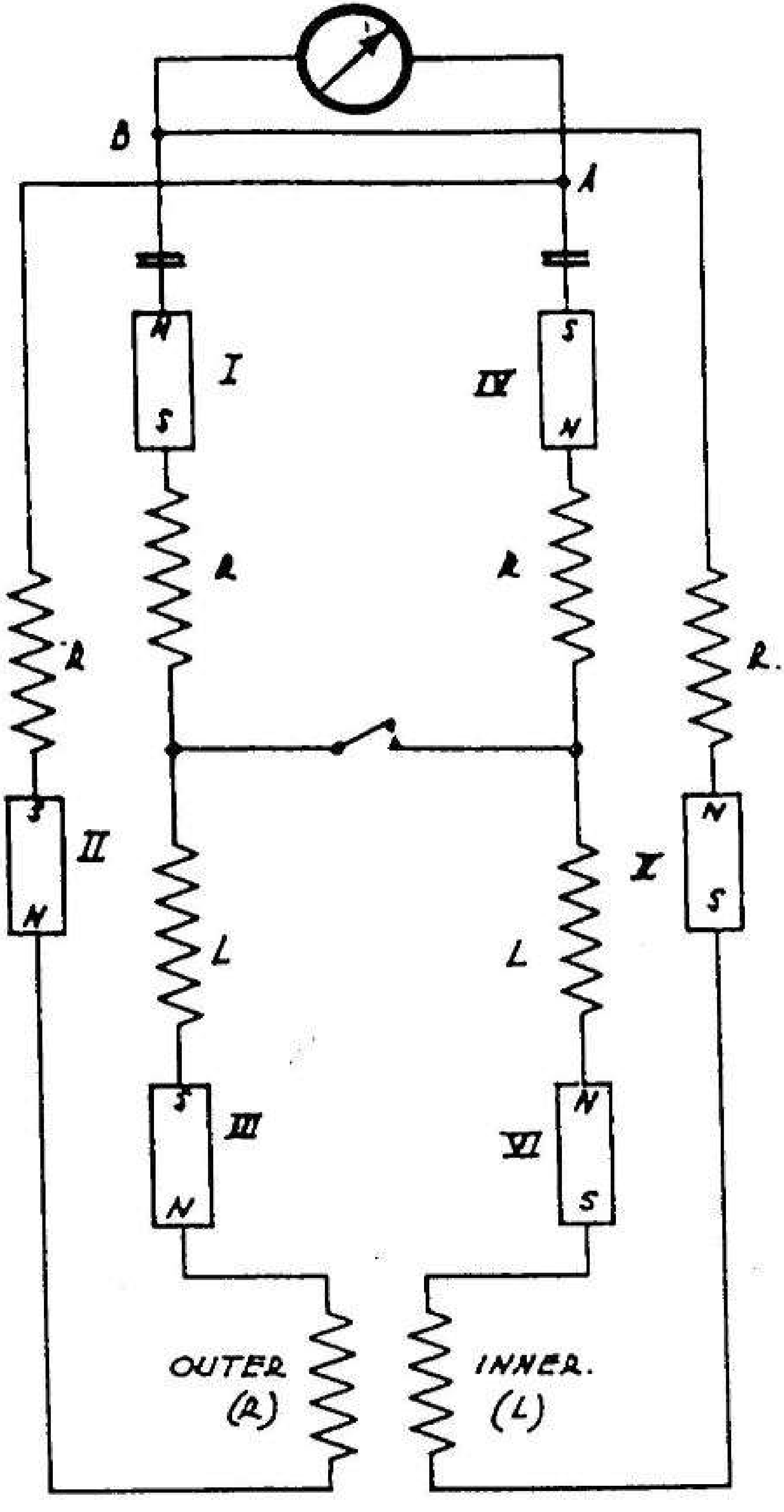
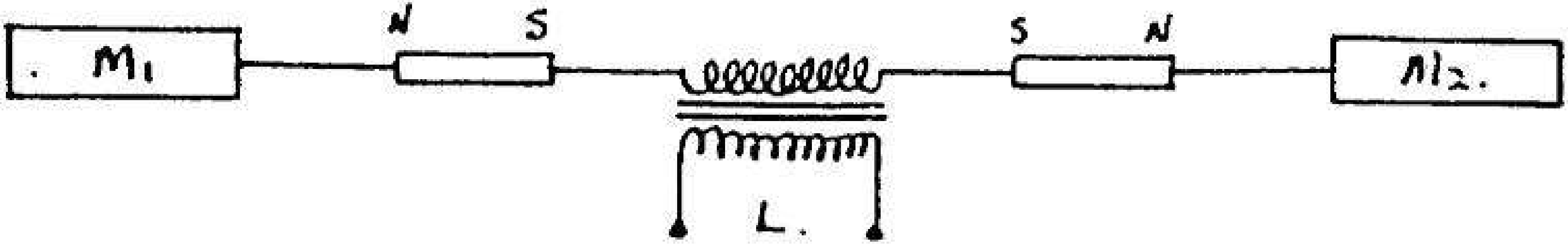
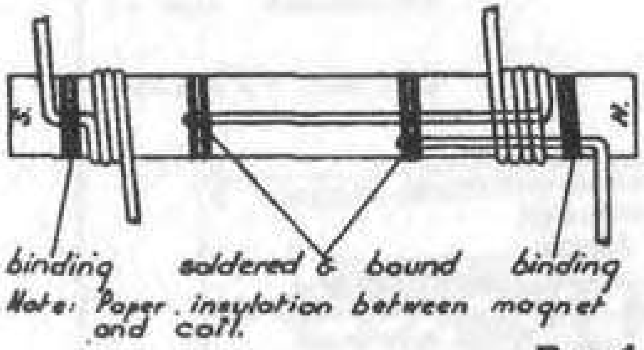
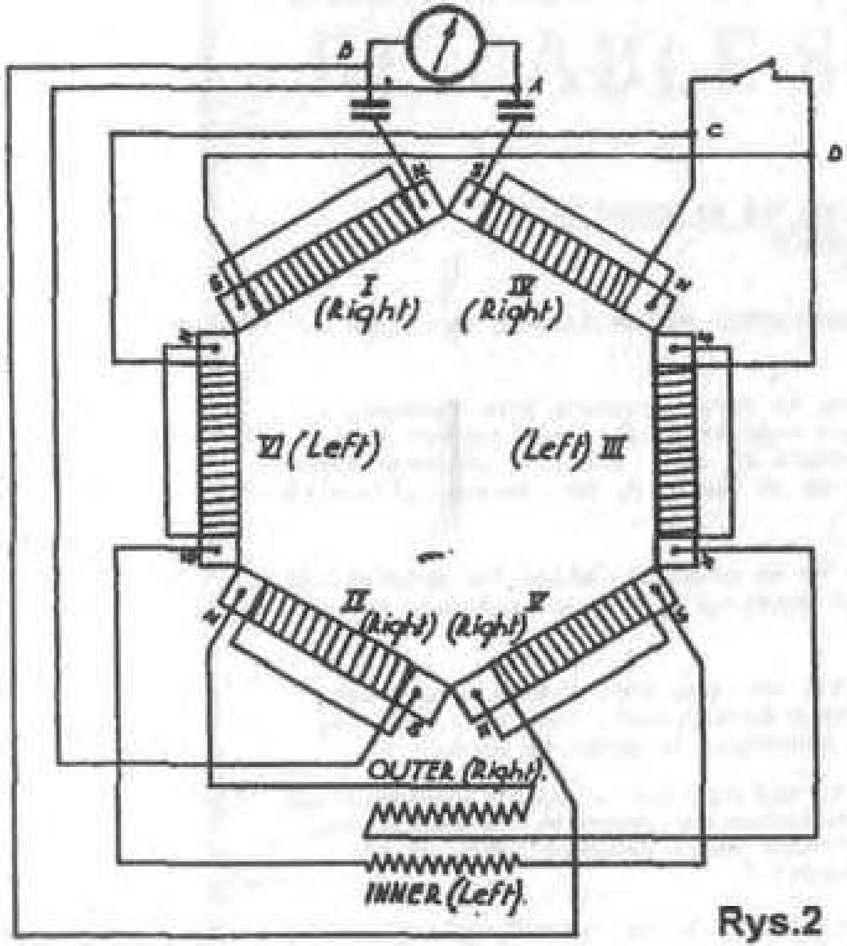


Fig. 3.

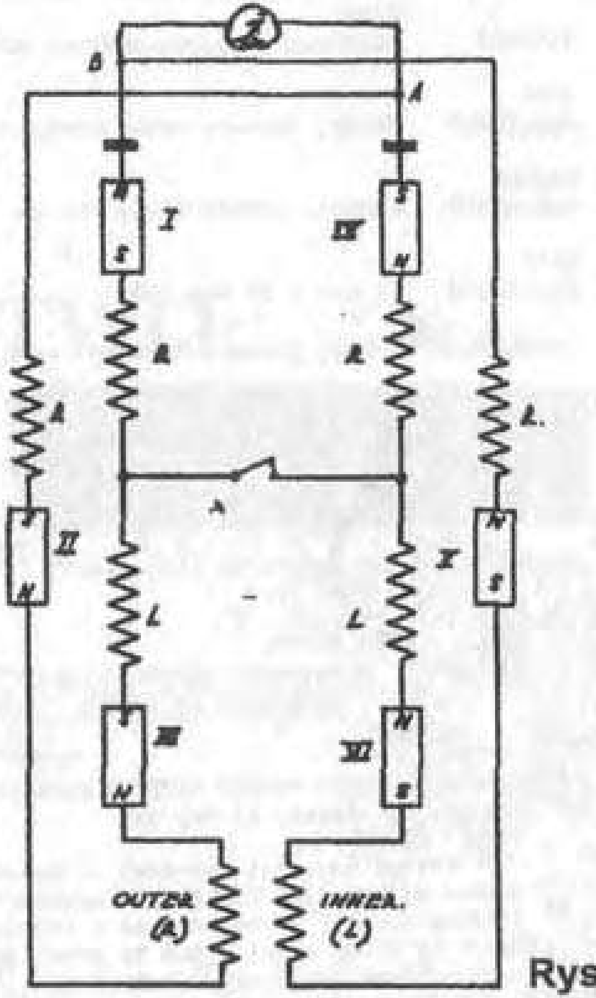

M1
N
S
S
N
M2.
L.



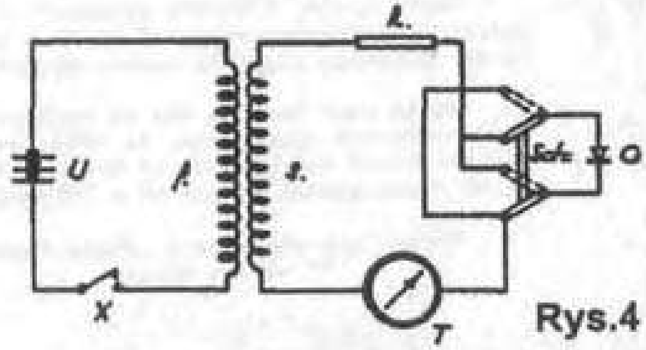
Rys.1



Rys.2



Rys.3



Rys.4

Magnetromapparata

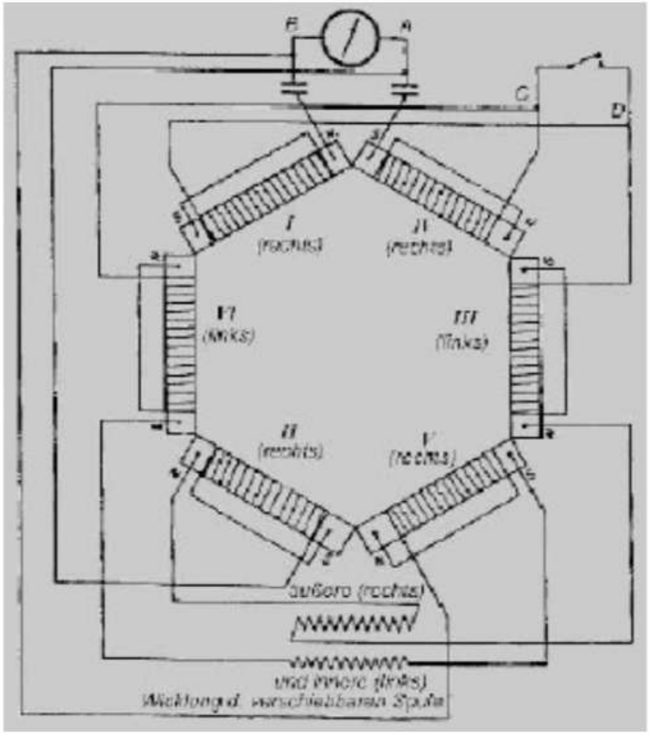
A solid-state magnetic generator was invented by Captain Hans Coler of Germany and a 10 watt example first shown in 1925. It involved magnets to generate electricity and employed a small battery but no other source of input power other than what he called space energy of Nature's quantum invisible world.

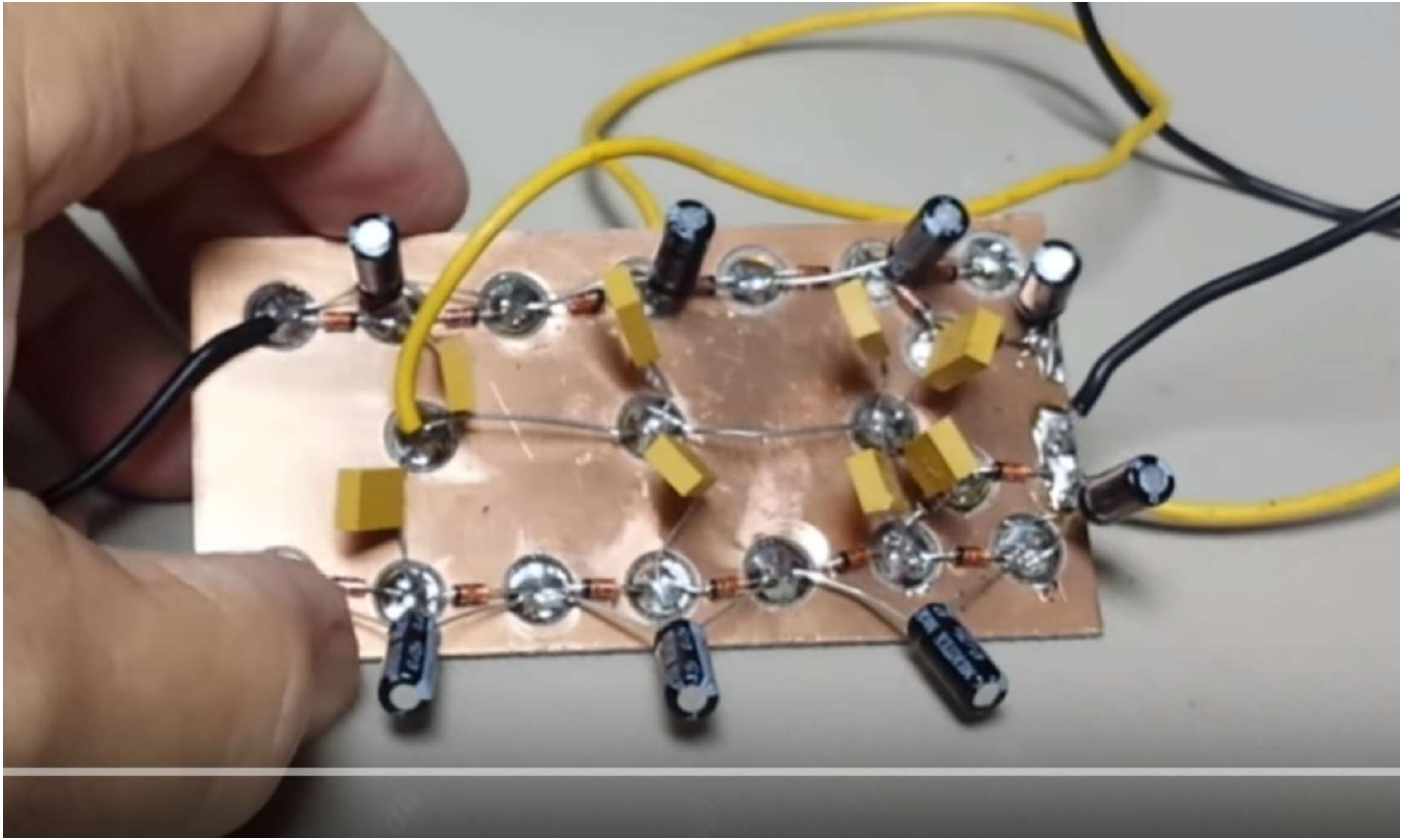
It was denied patent protection by the German Patent Office as being a perpetual motion device. For a time it was ignored, and the records relating to it were buried in hidden archives, possibly because the scientists who had to pass judgement could not understand the physical reason why the invention actually worked.

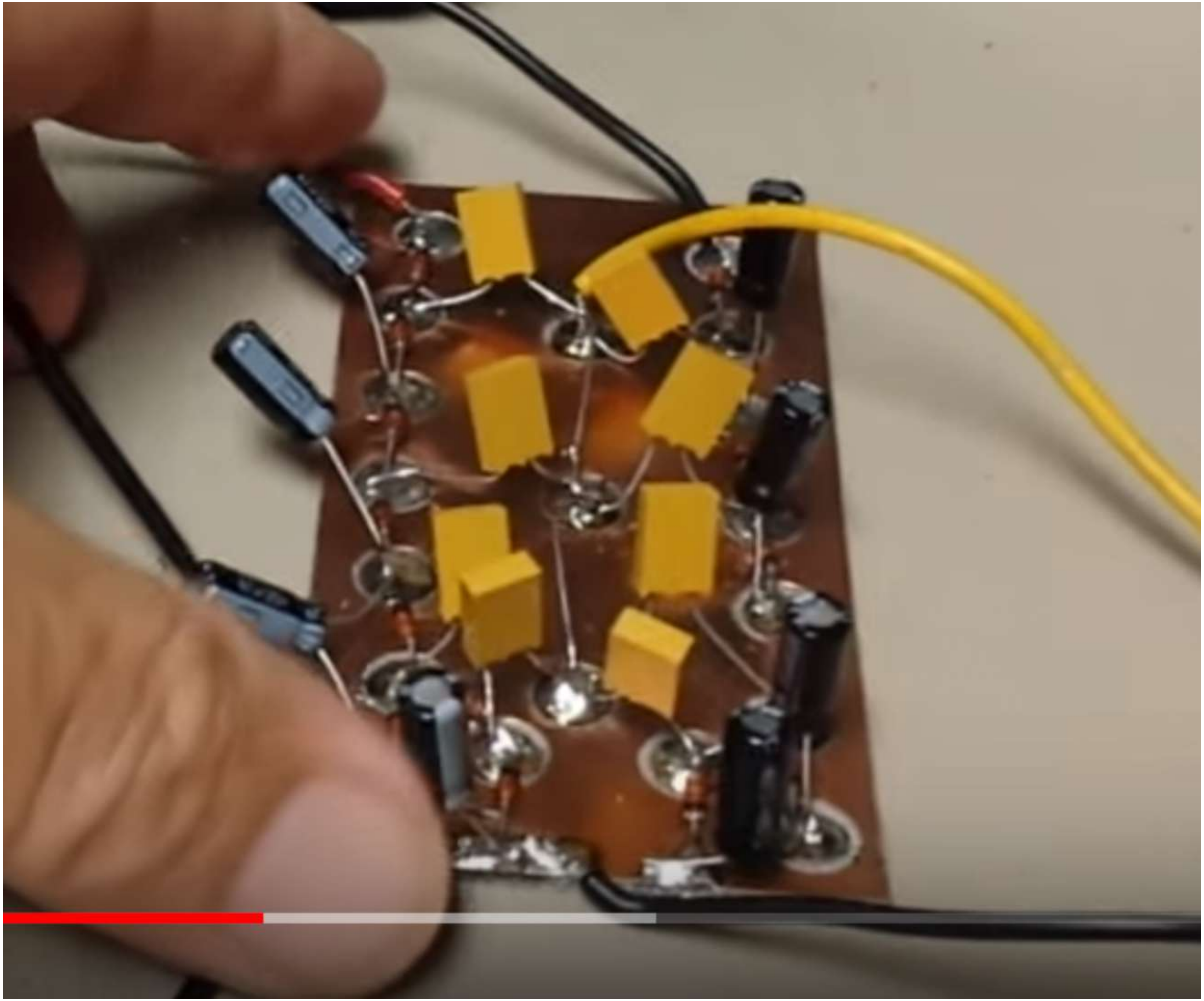
Later, a 70 Watt prototype was built, and a company formed: Coler Gmbh. Later a 5 kilowatt devices was built which allegedly powered Coler's house and laboratory for three years.

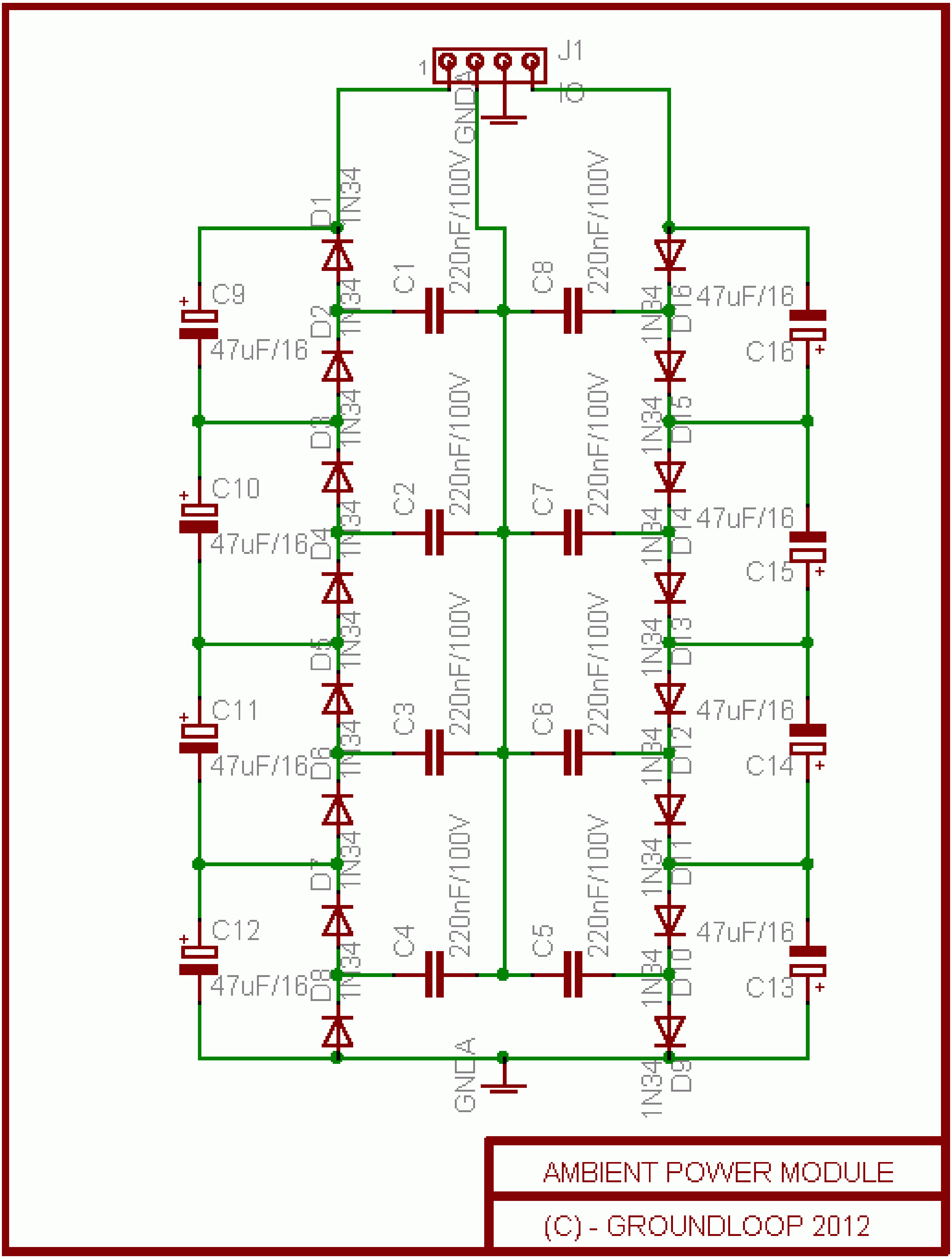
Official interest was shown by heads of the German navy who felt an investigation was necessary, and an official report was produced. A highly secret Nazi effort apparently had the goal of using his invention to recharge submarine batteries, without the need for the sub to surface. Experts examined the device and could find no fraud. It was judged Coler was an honest experimenter, but no expert opinion was forth coming as to how the unit operated. It was put under Official Secrecy after its operation had been verified by Government scientists. (Reference: articles entitled Perpetual Commotion and Hans Coler on http://magneticpowerinc.com)

We don't know of anyone who has been able to successfully replicate this technology into a practical device.

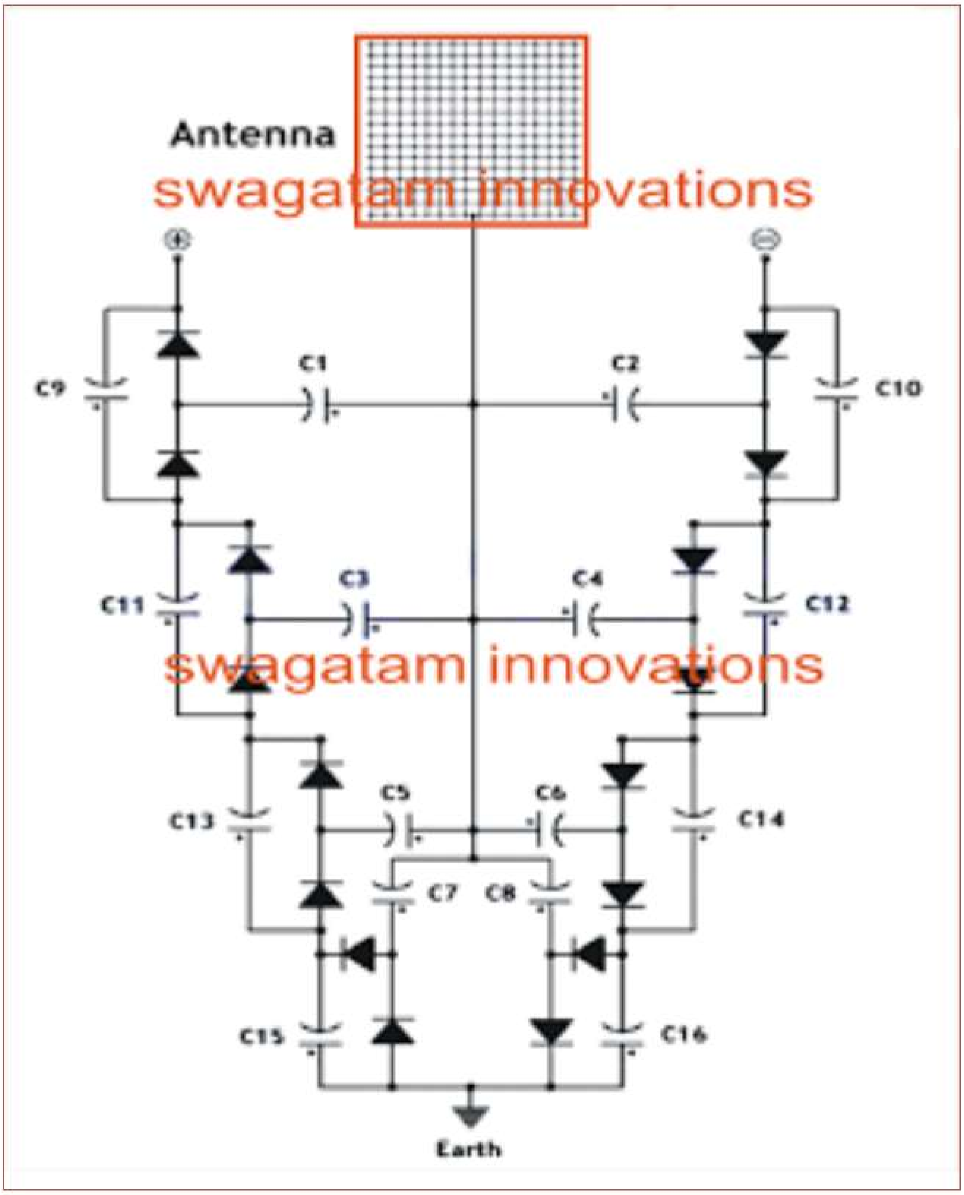







J1
1
IO
GNDA
D1 1N34
D2 1N34
D3 1N34
D4 1N34
D5 1N34
D6 1N34
D7 1N34
D8 1N34
D9 1N34
D10 1N34
D11 1N34
D12 1N34
D13 1N34
D14 1N34
D15 1N34
D16 1N34
C1 220nF/100V
C2 220nF/100V
C3 220nF/100V
C4 220nF/100V
C5 220nF/100V
C6 220nF/100V
C7 220nF/100V
C8 220nF/100V
C9 47uF/16
C10 47uF/16
C11 47uF/16
C12 47uF/16
C13 47uF/16
C14 47uF/16
C15 47uF/16
C16 47uF/16
AMBIENT POWER MODULE
(C) - GROUNDLOOP 2012

Circuit Diagram

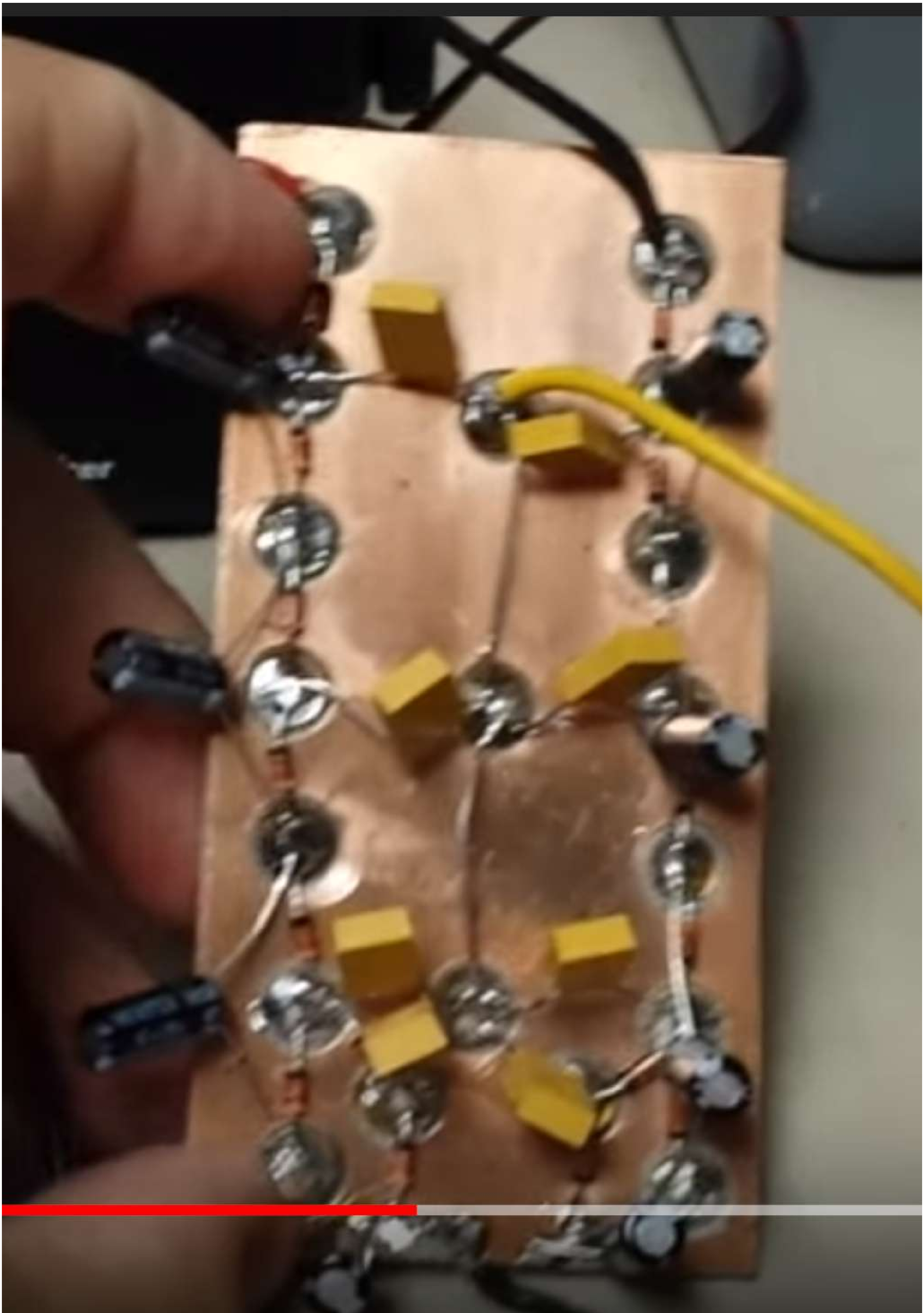


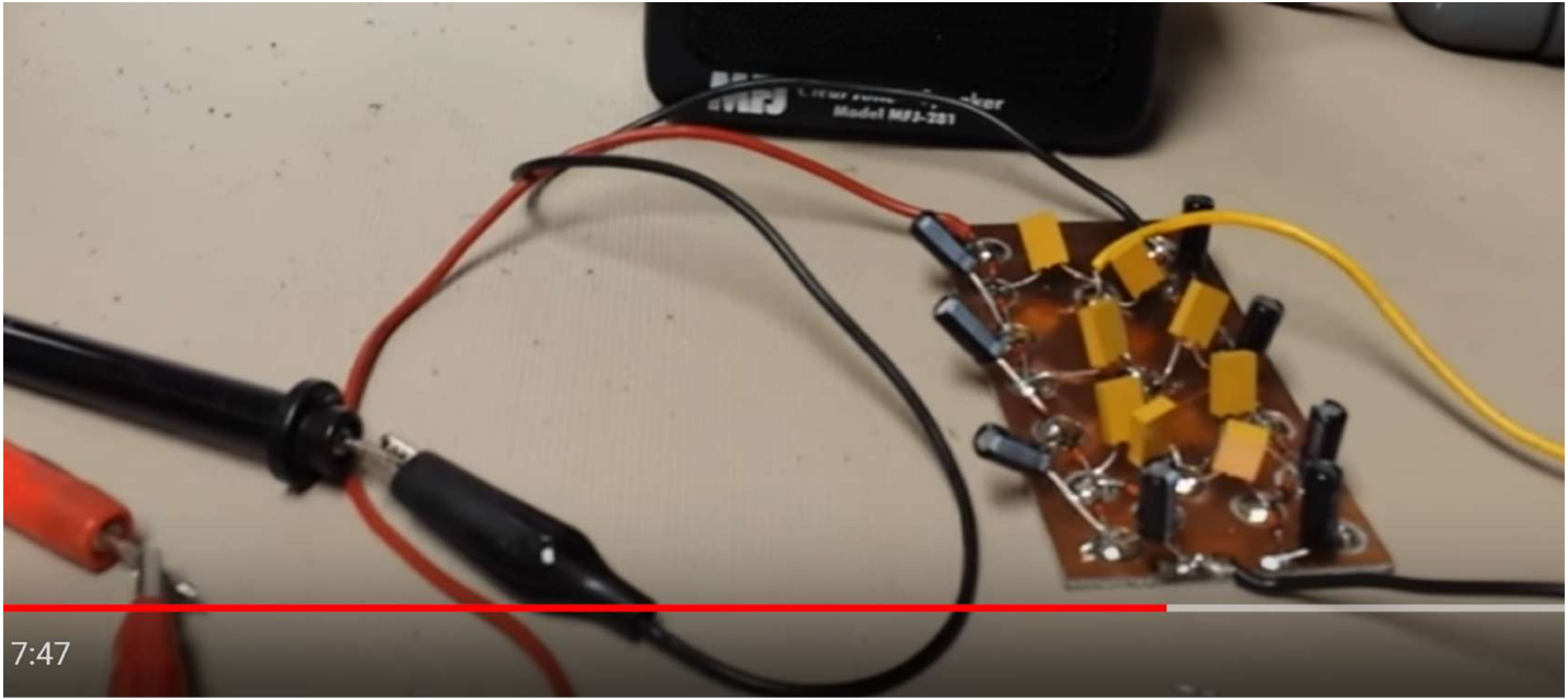
Parts List

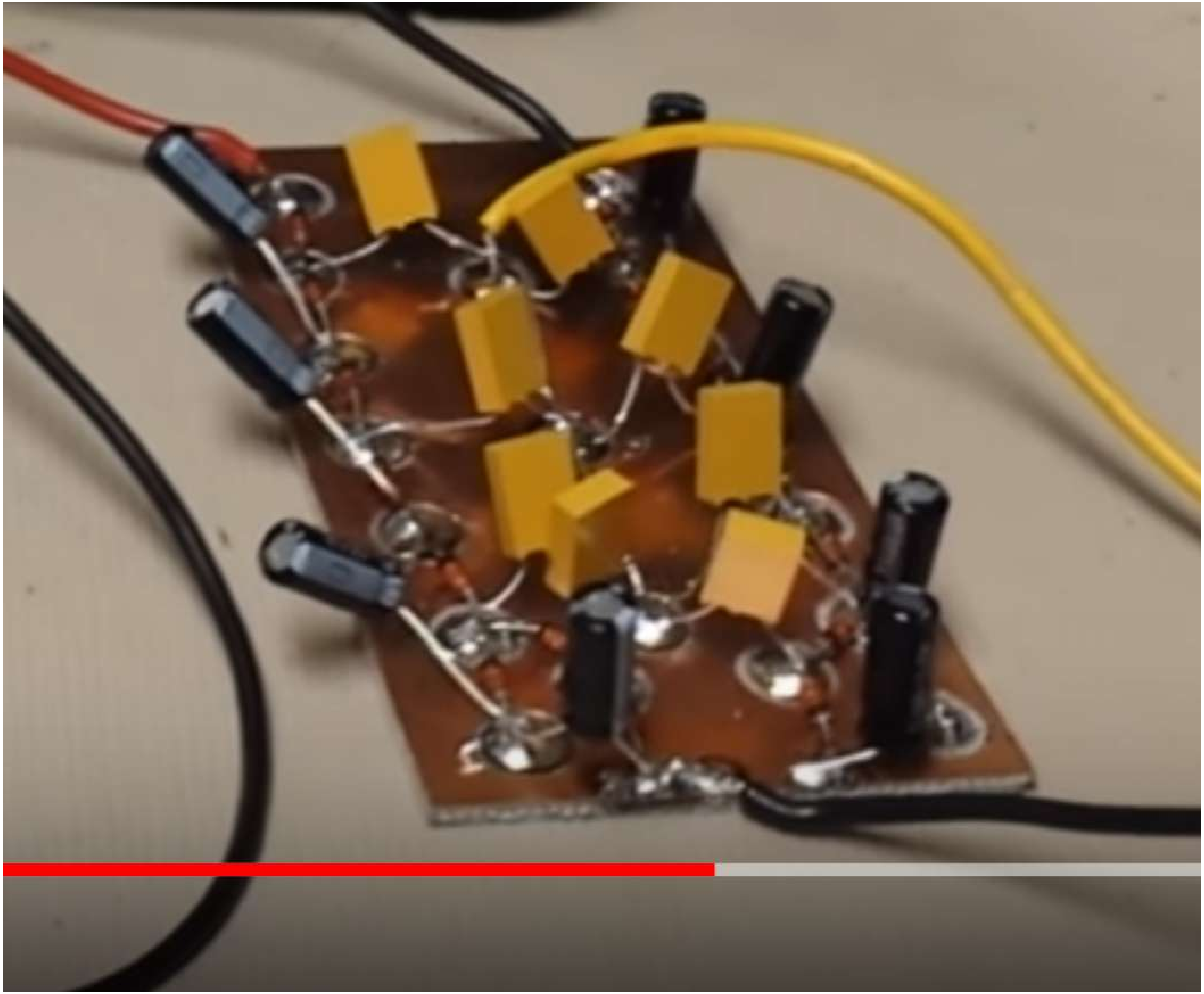
All Diodes are 1N4148

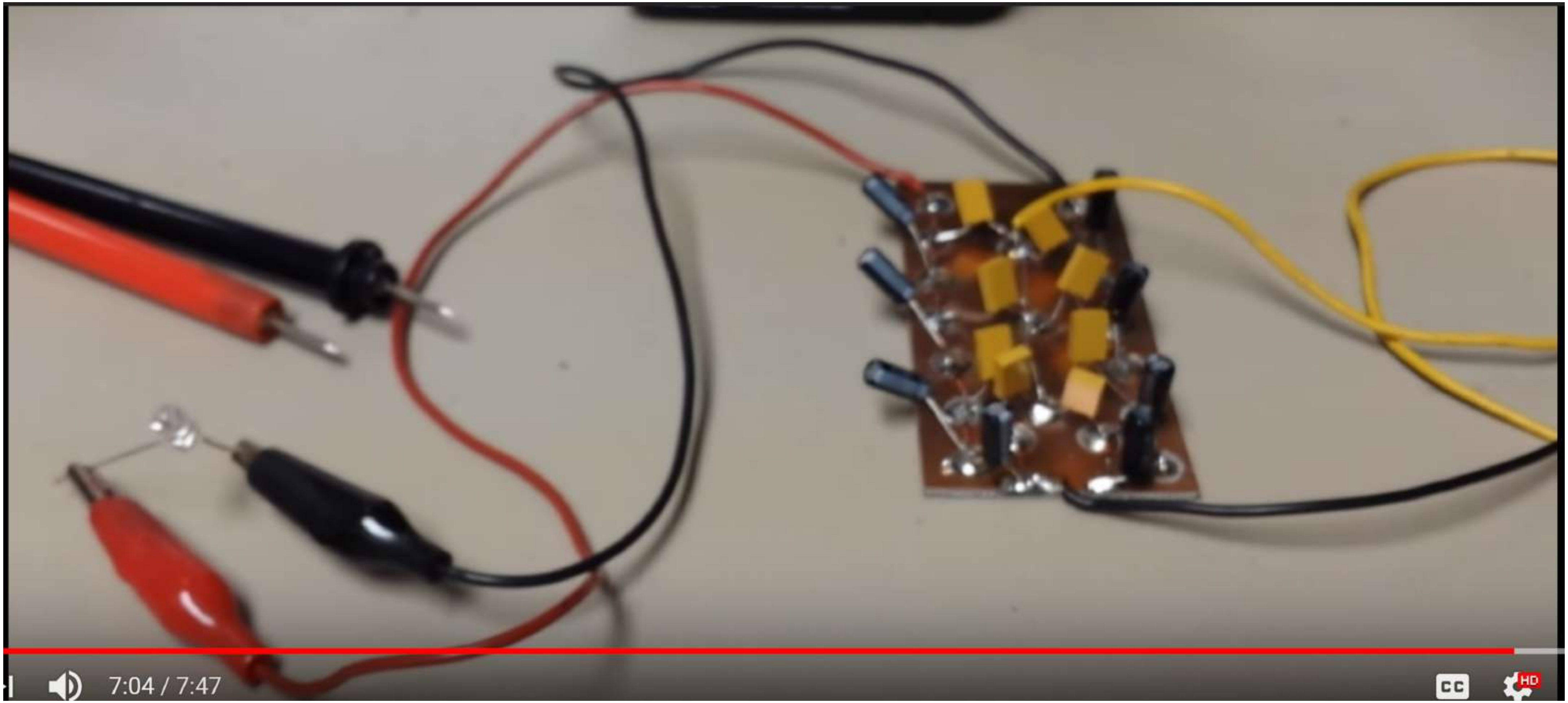
C1---C8 = 0.22uF/100V mylar

C9----C16 = 33uF/25V electrolytic




MFJ
7:47

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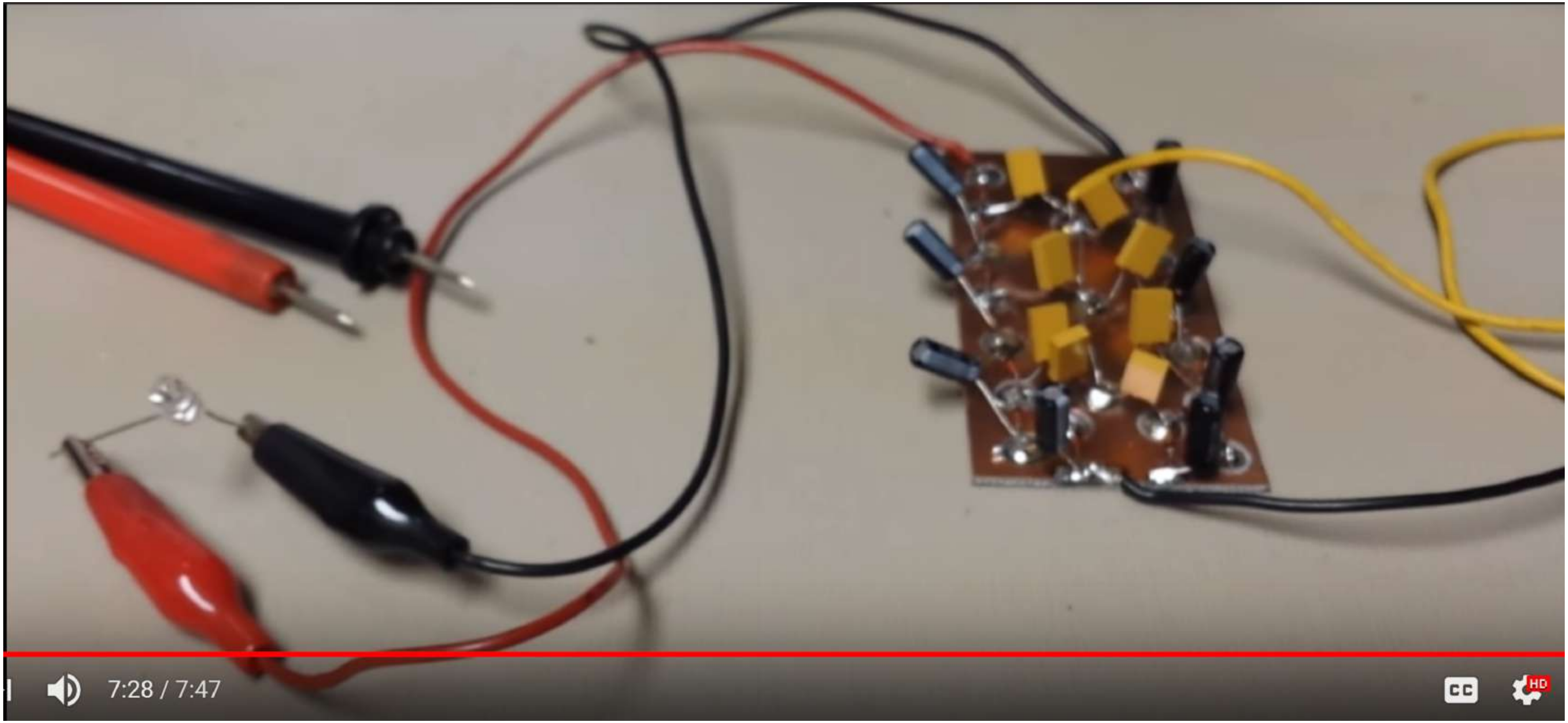
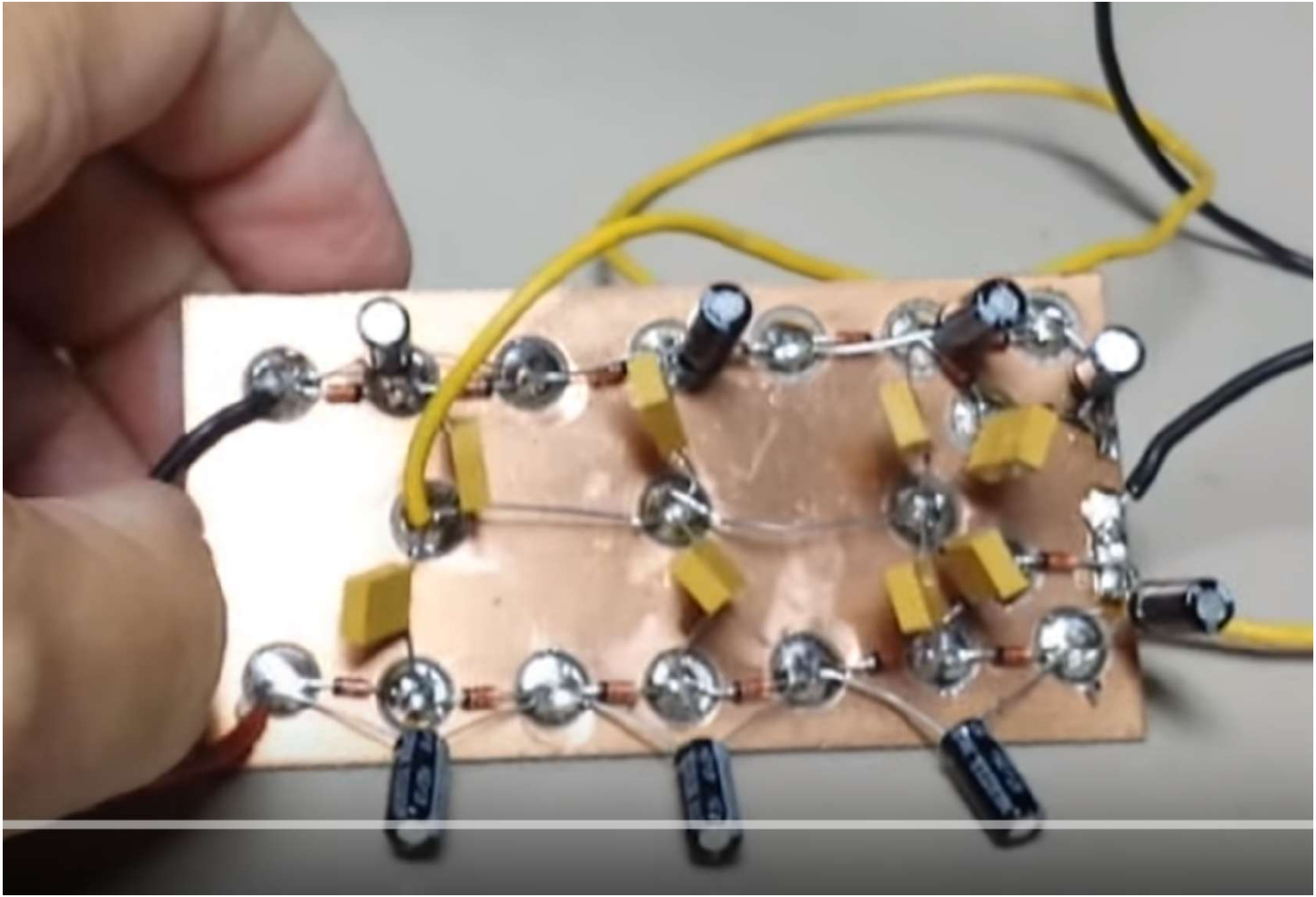
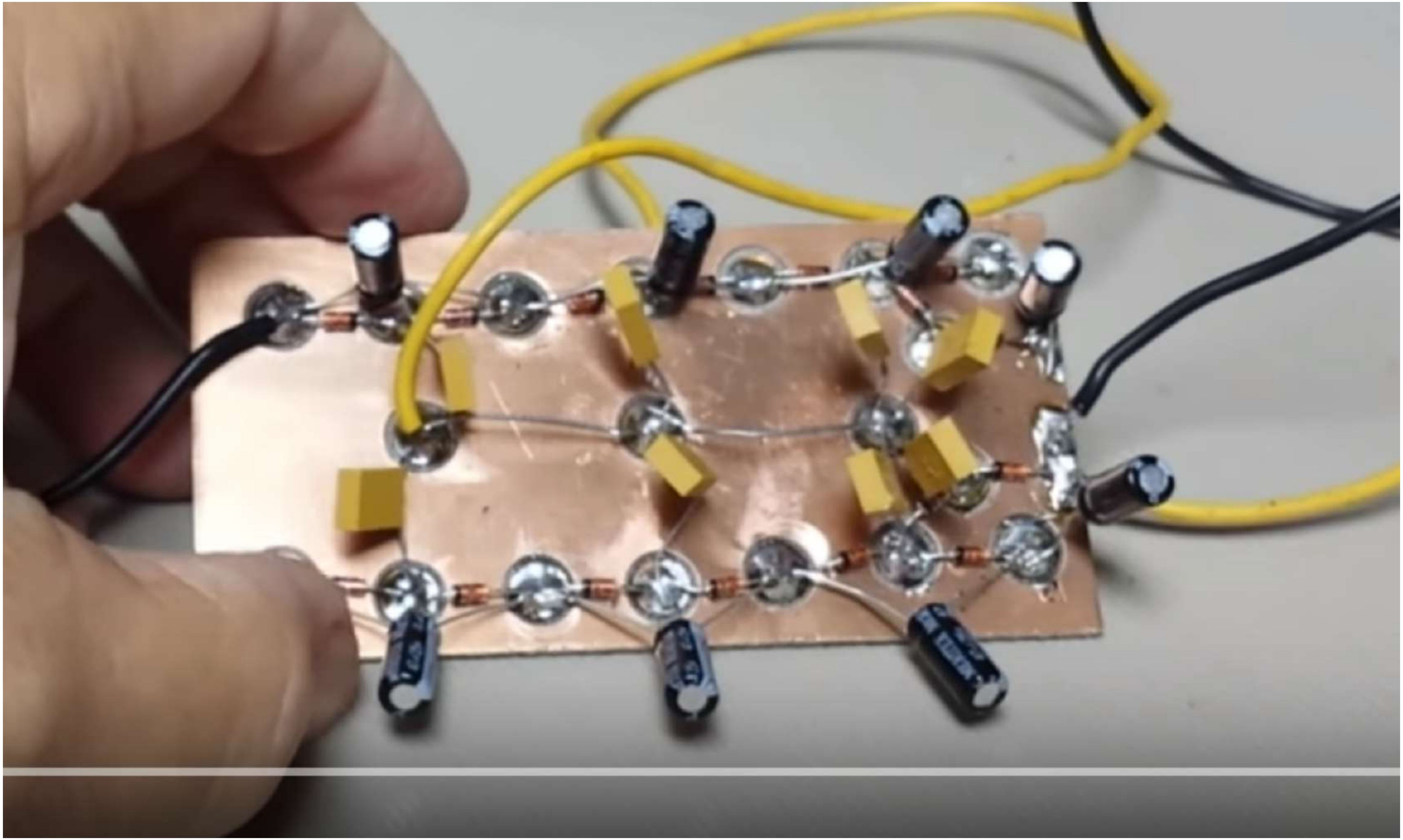
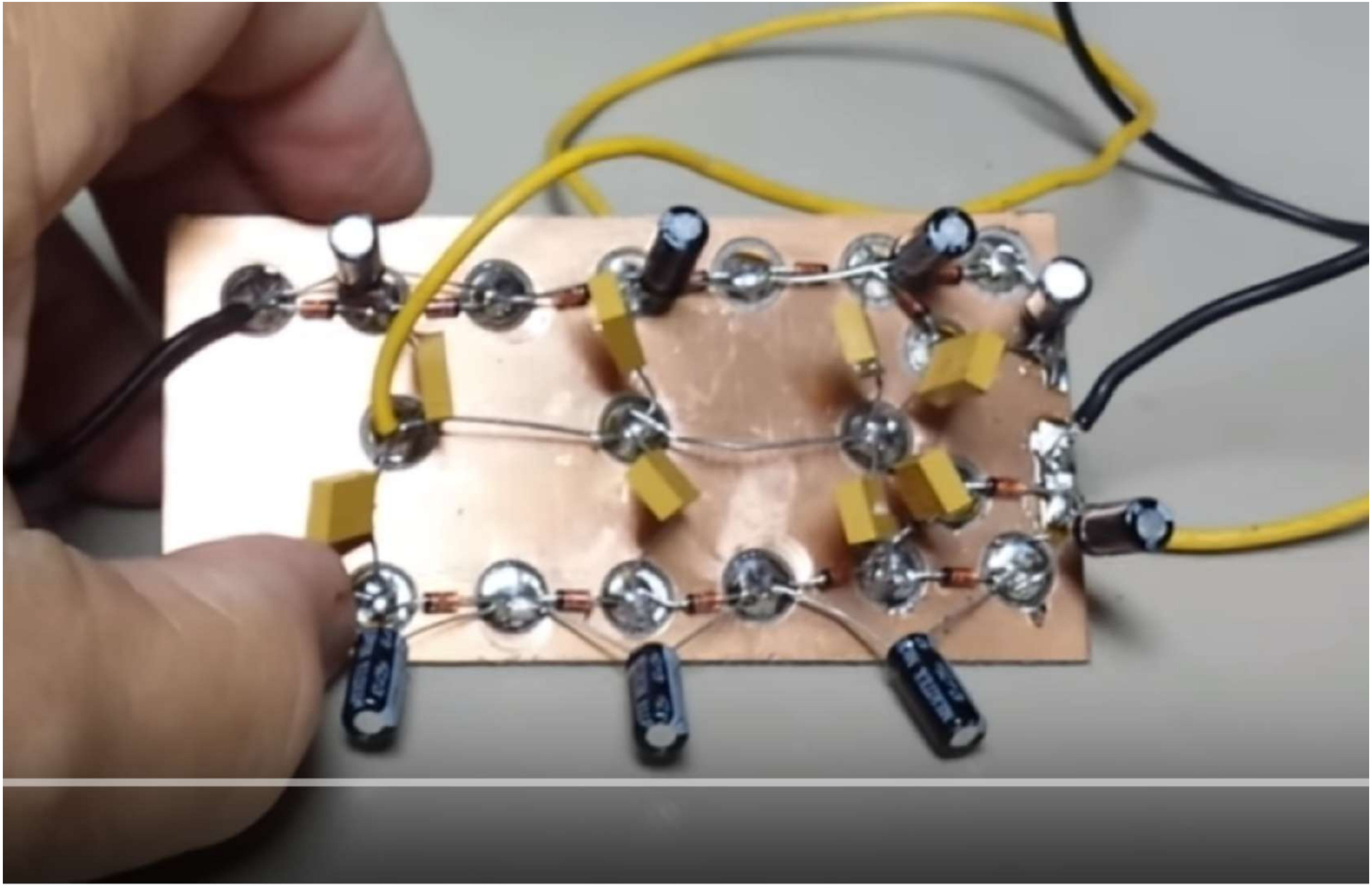
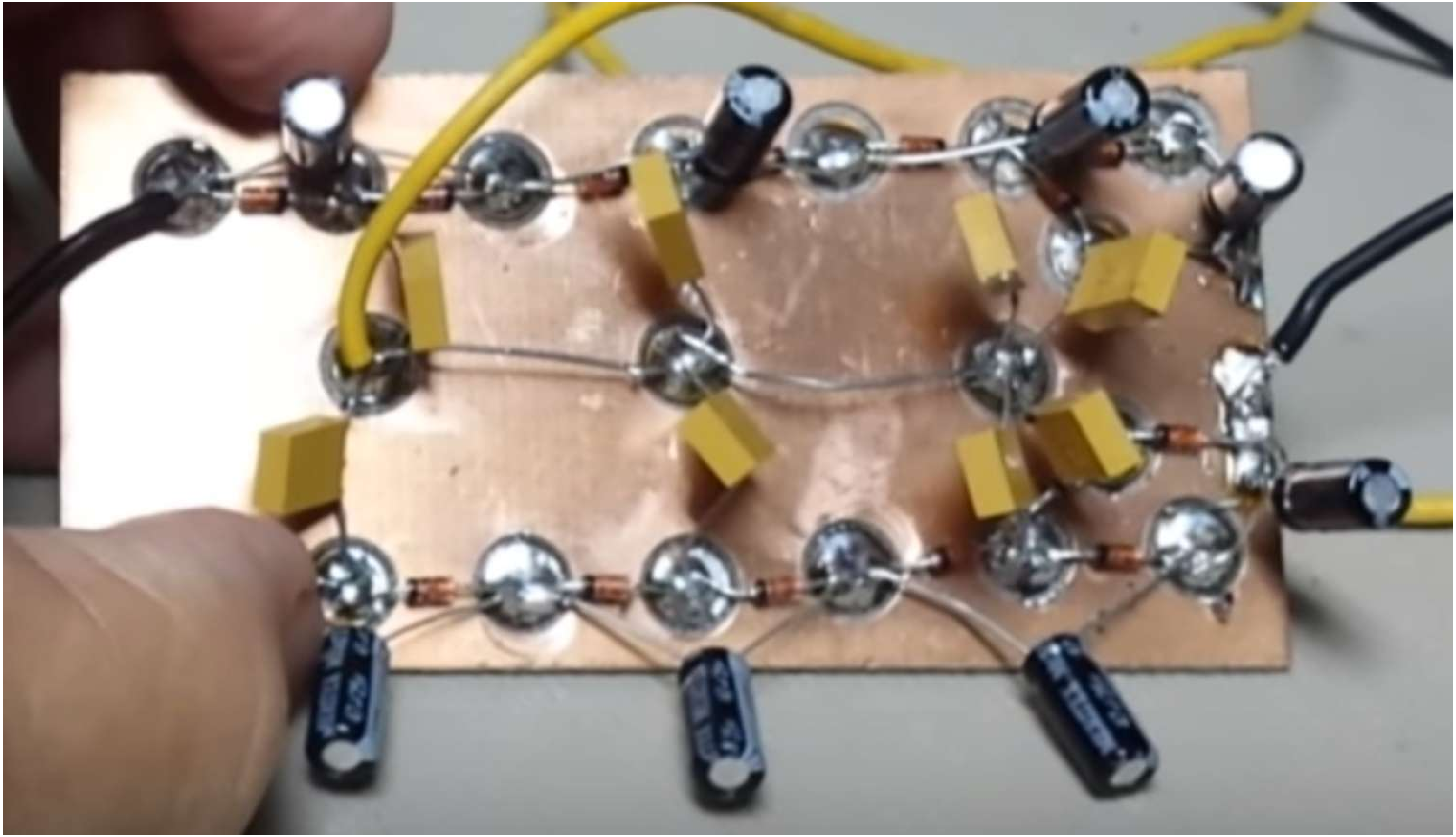
CC
HD

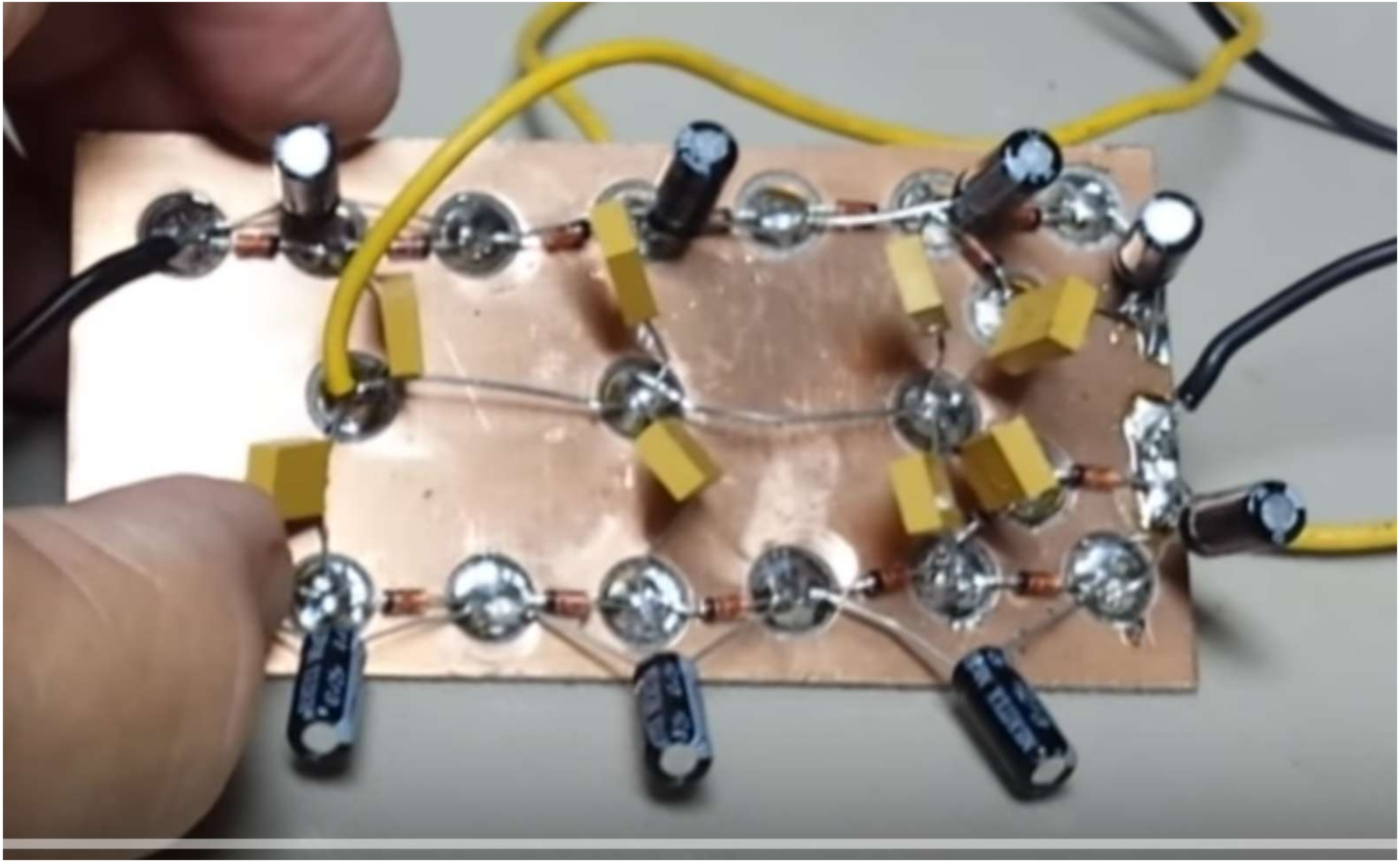

7:28 / 7:47
CC
HD

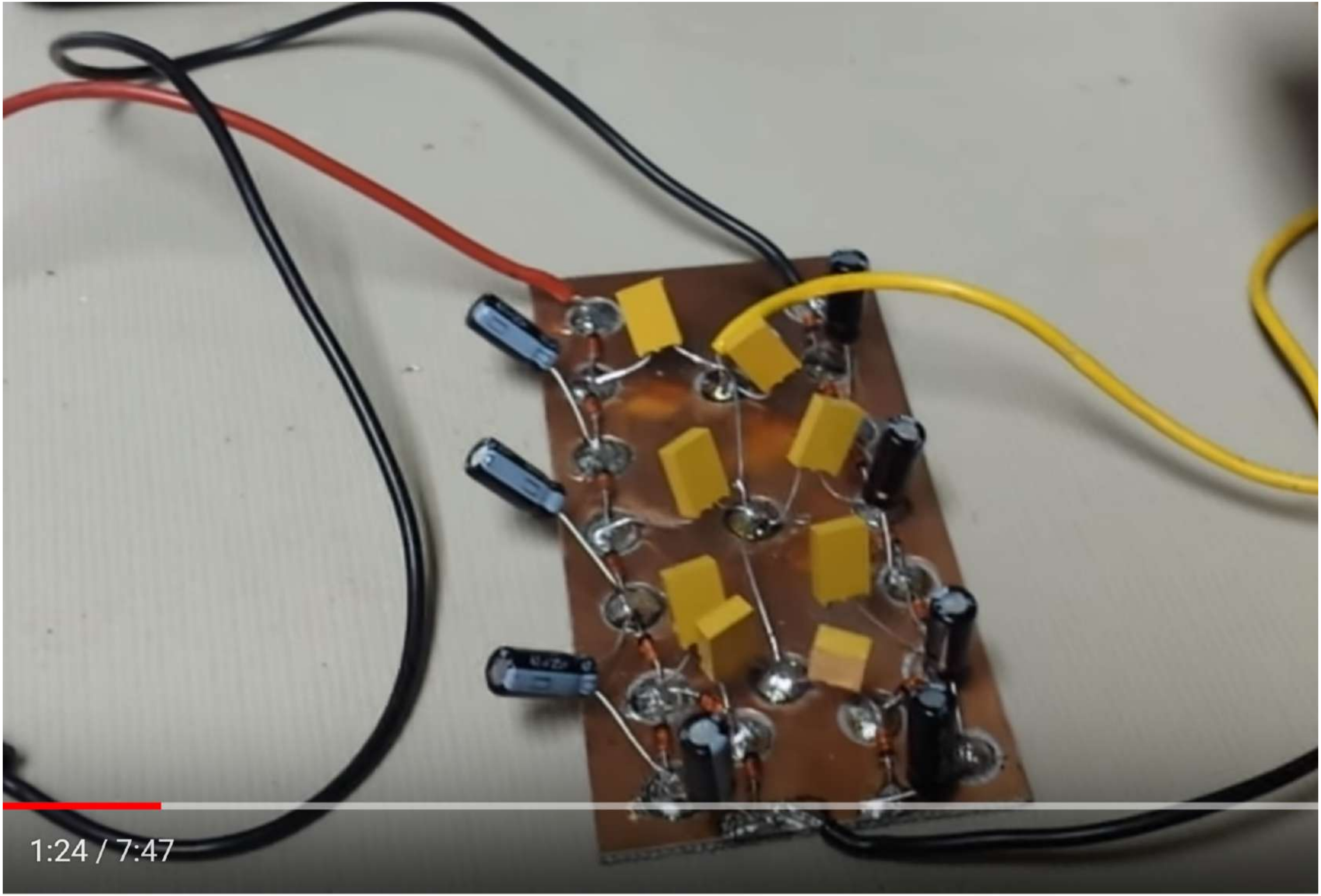


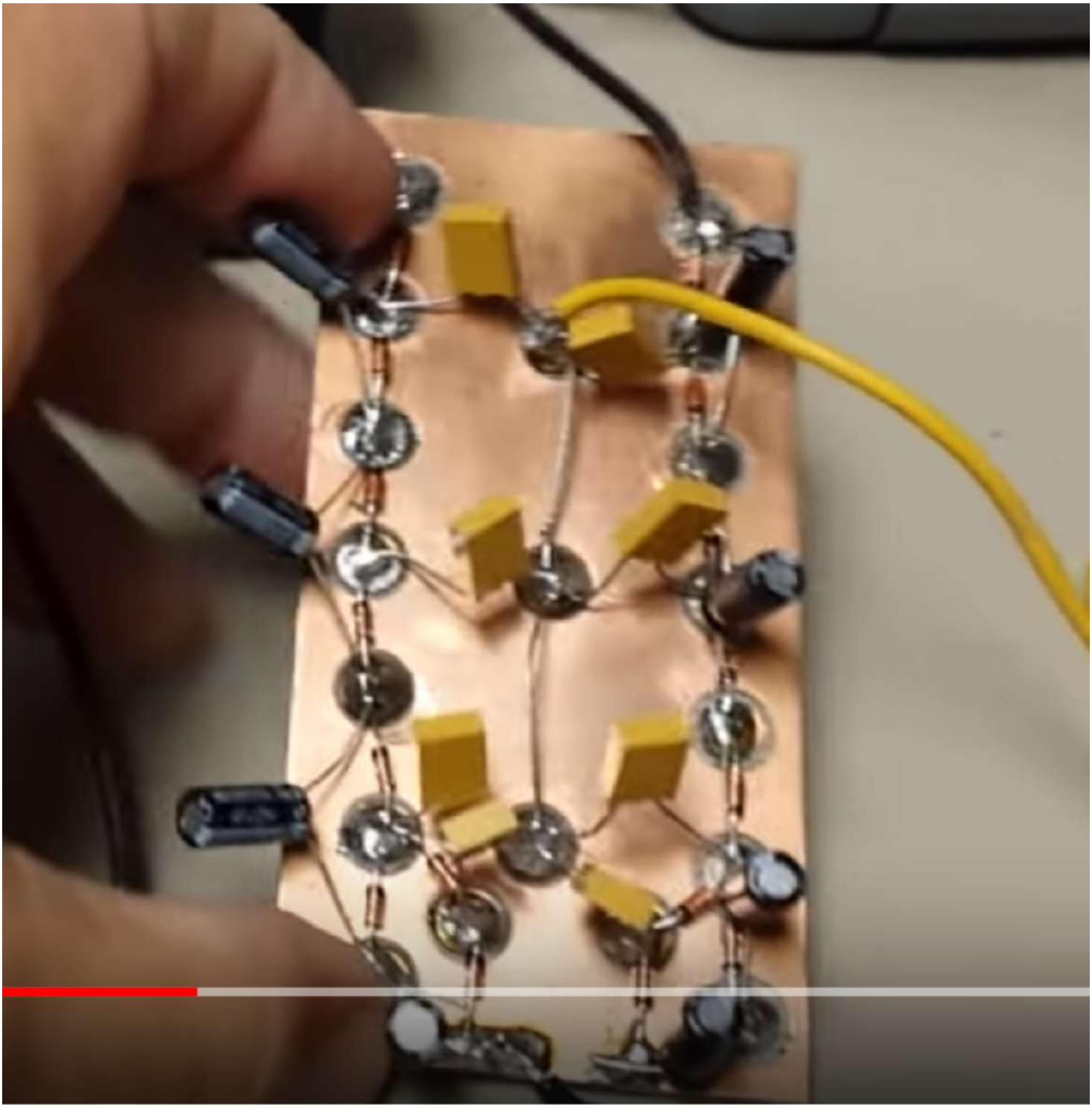


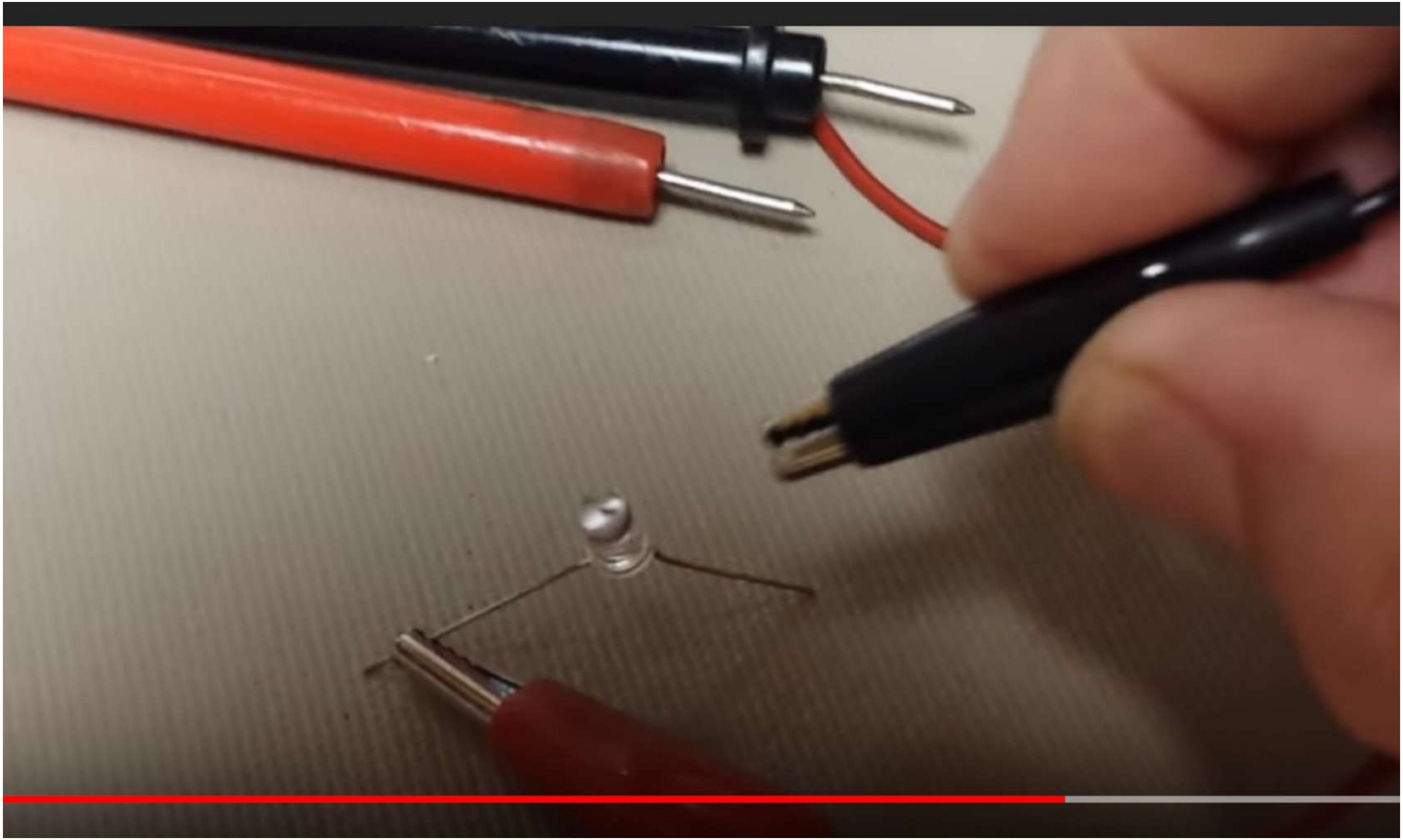


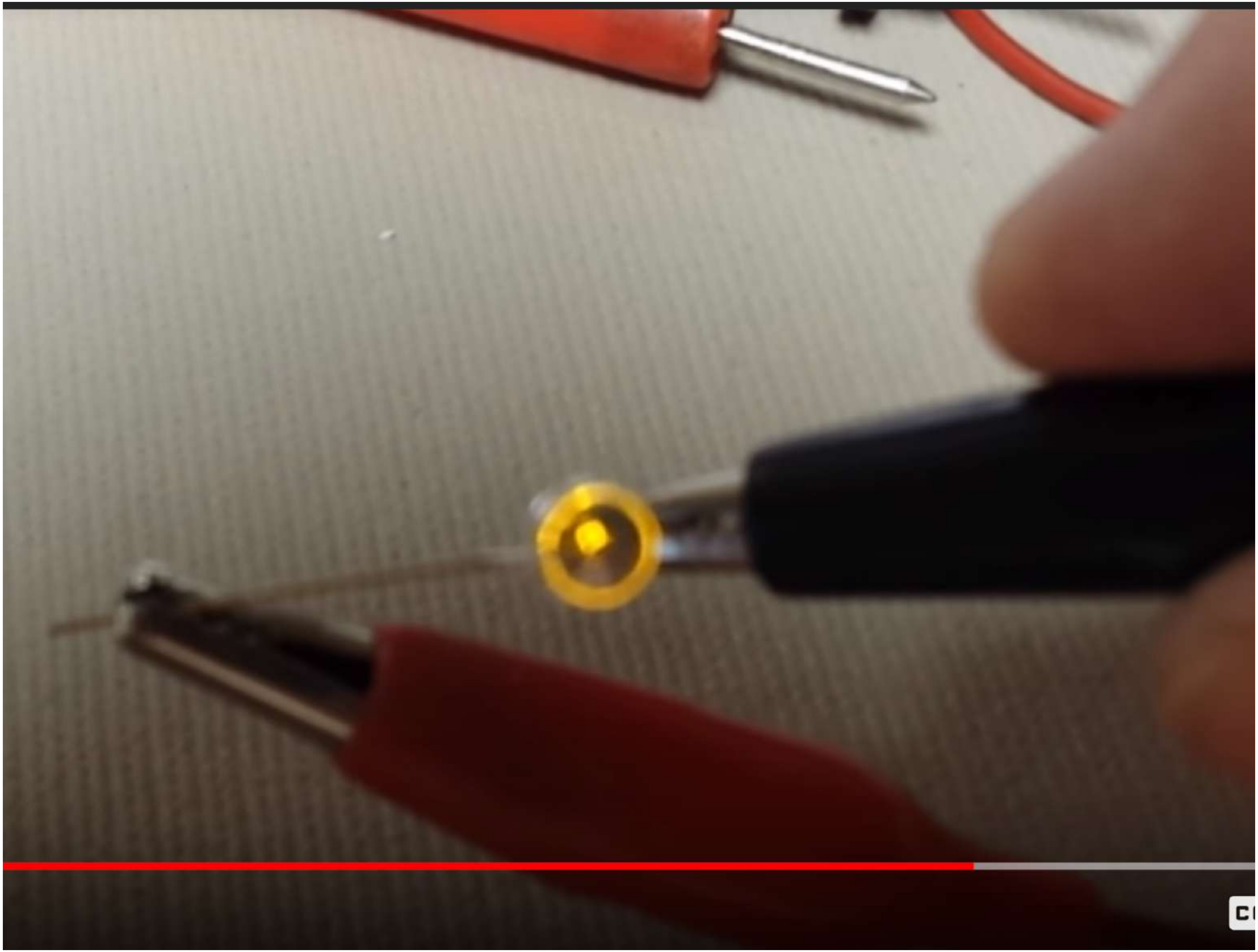


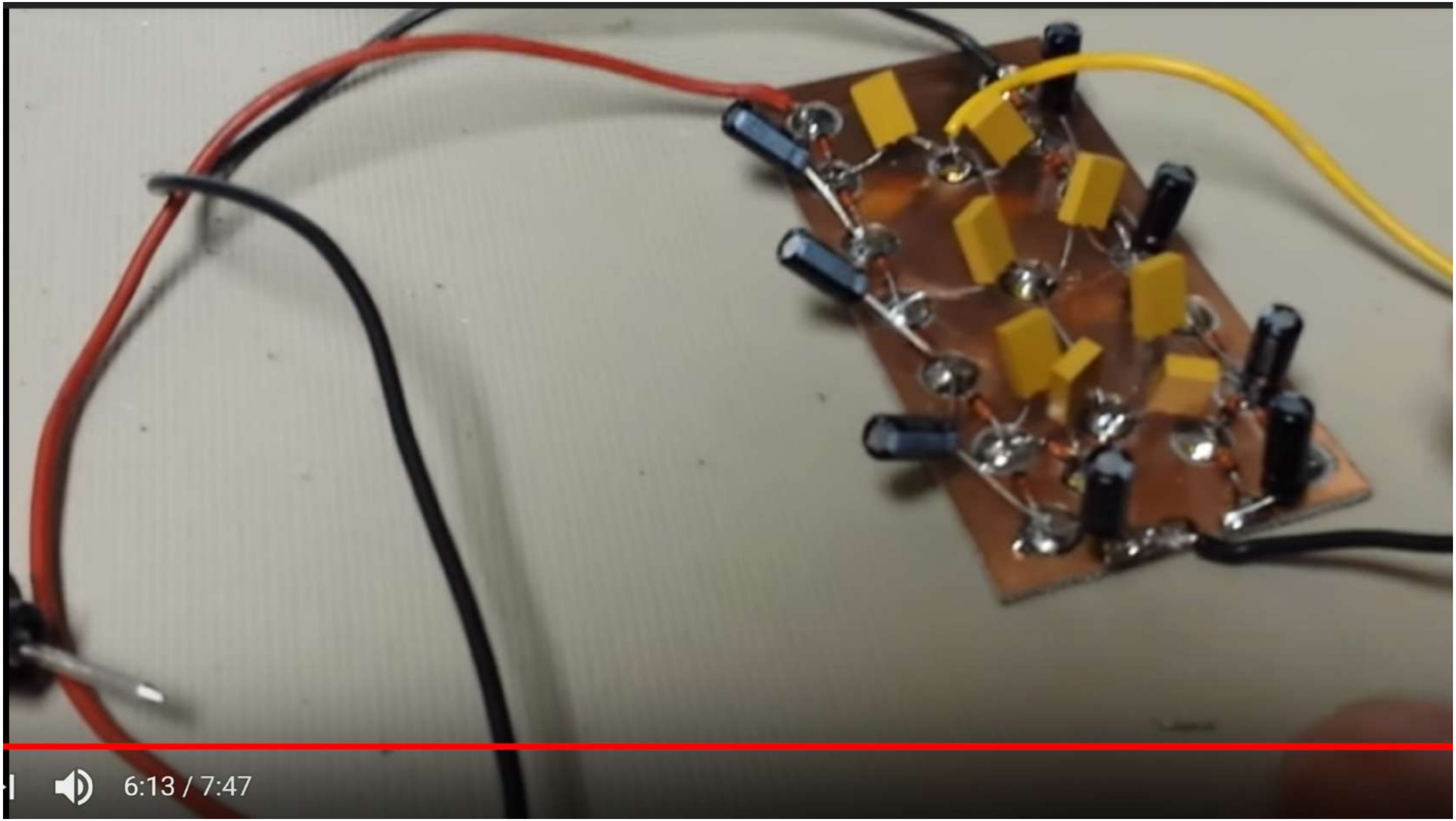


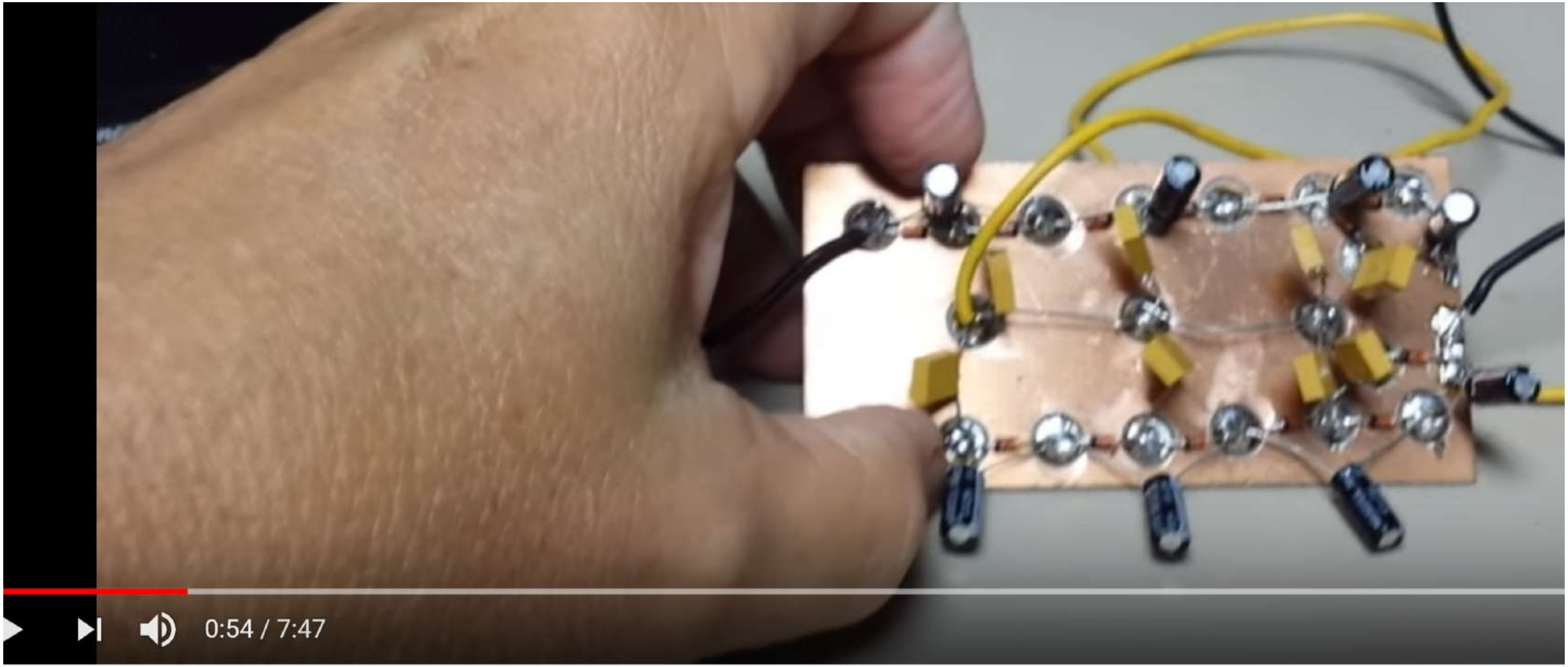

1:24 / 7:47







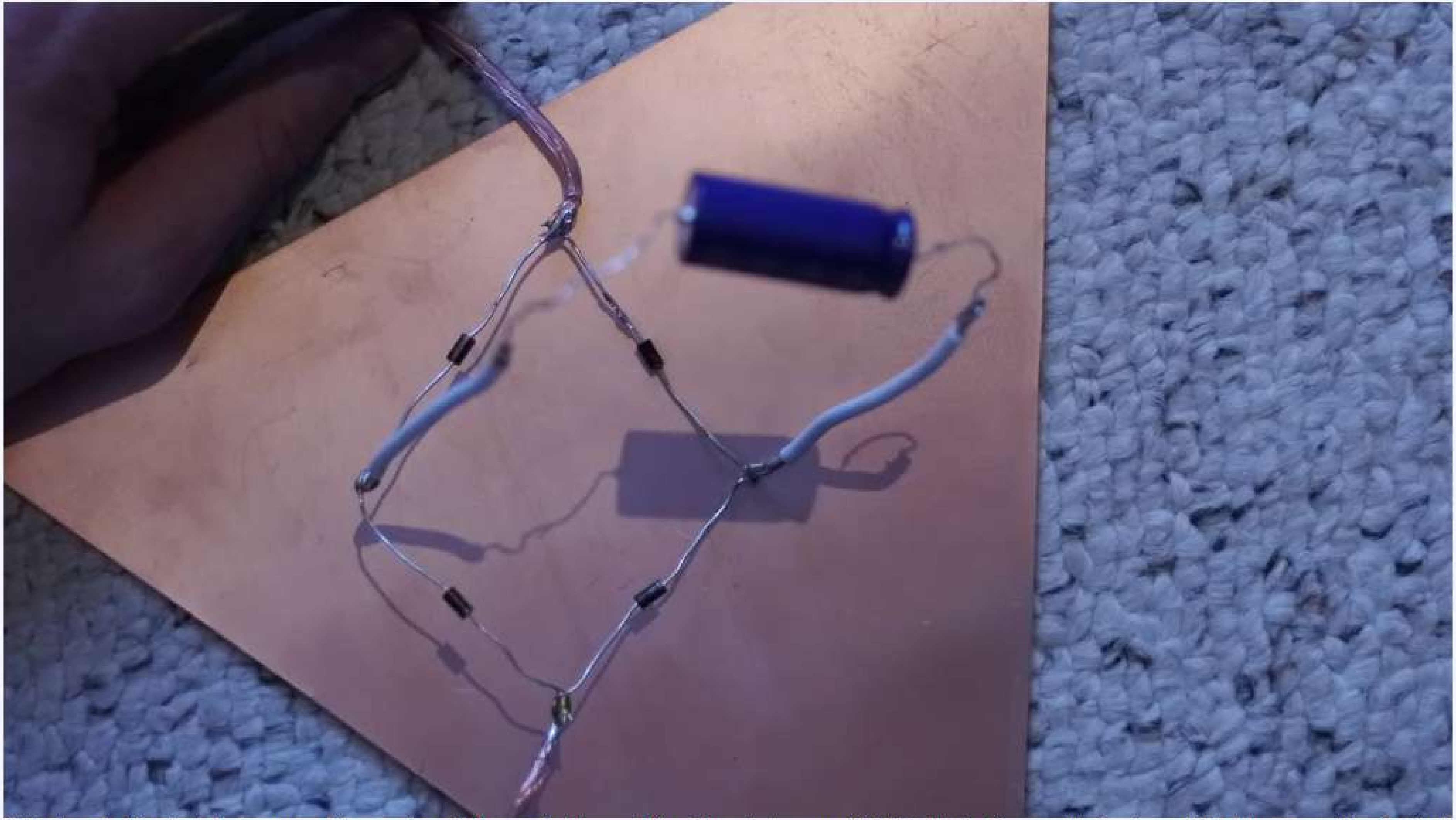

6:13 / 7:47



Free Electricial Energy From Invisible Radiation

Up next

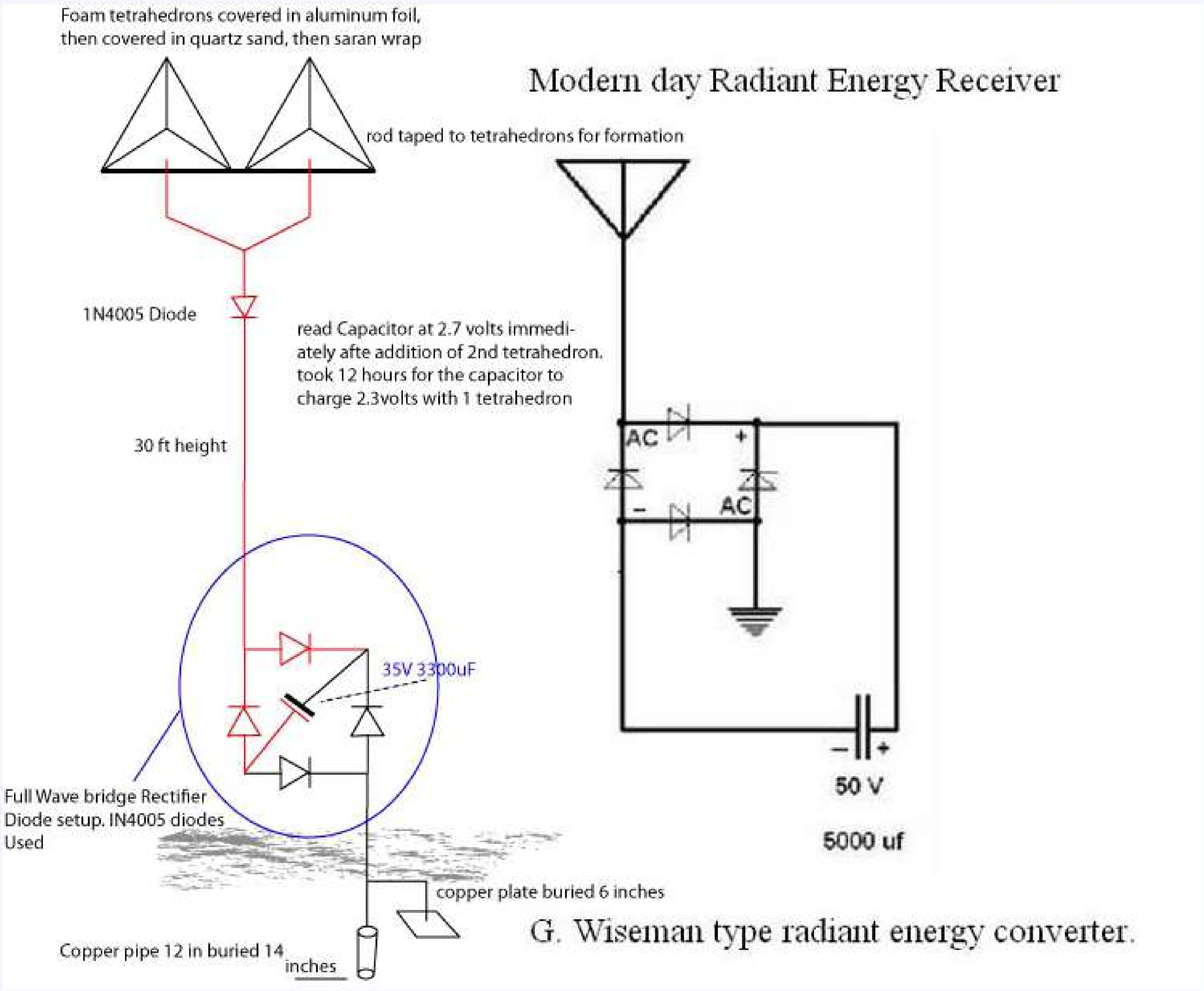
Free Energy Vs



^^^ here is the 4 diodes arranged to create a full wave bridge rectifier. The diodes are 1N4005 diodes from radioshack, and the blue capacitor (radioshack) is 35Volt 3300uF,

^^^ view of the circuit

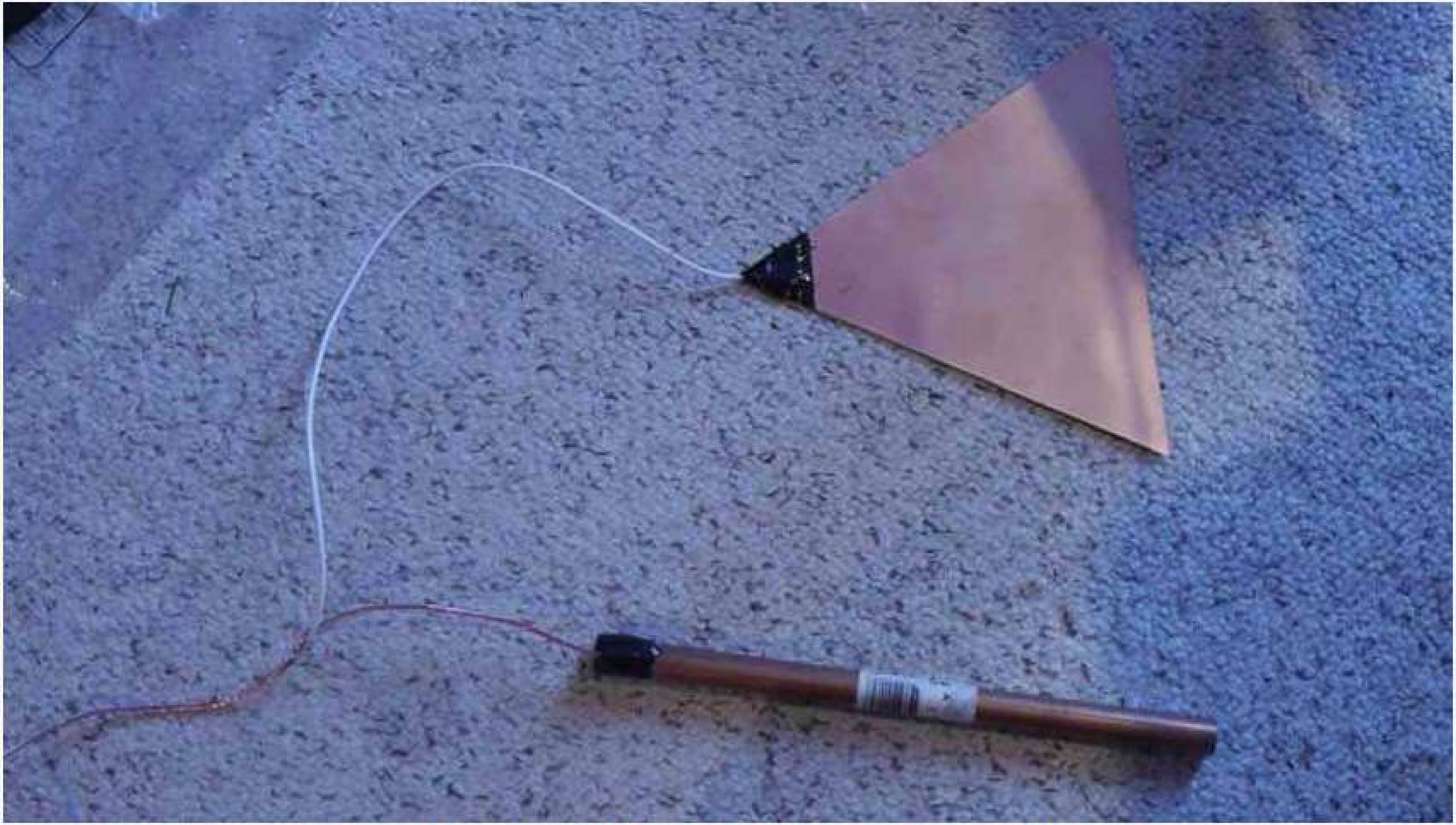
I made a radiant energy antenna for my 1st Free Energy project, and with LOTS of help and knowledge sharing fro
have 3 antennas and 2 grounds and have 2.81 volts in my cap. Somethings better than nothing😊 heres some pics



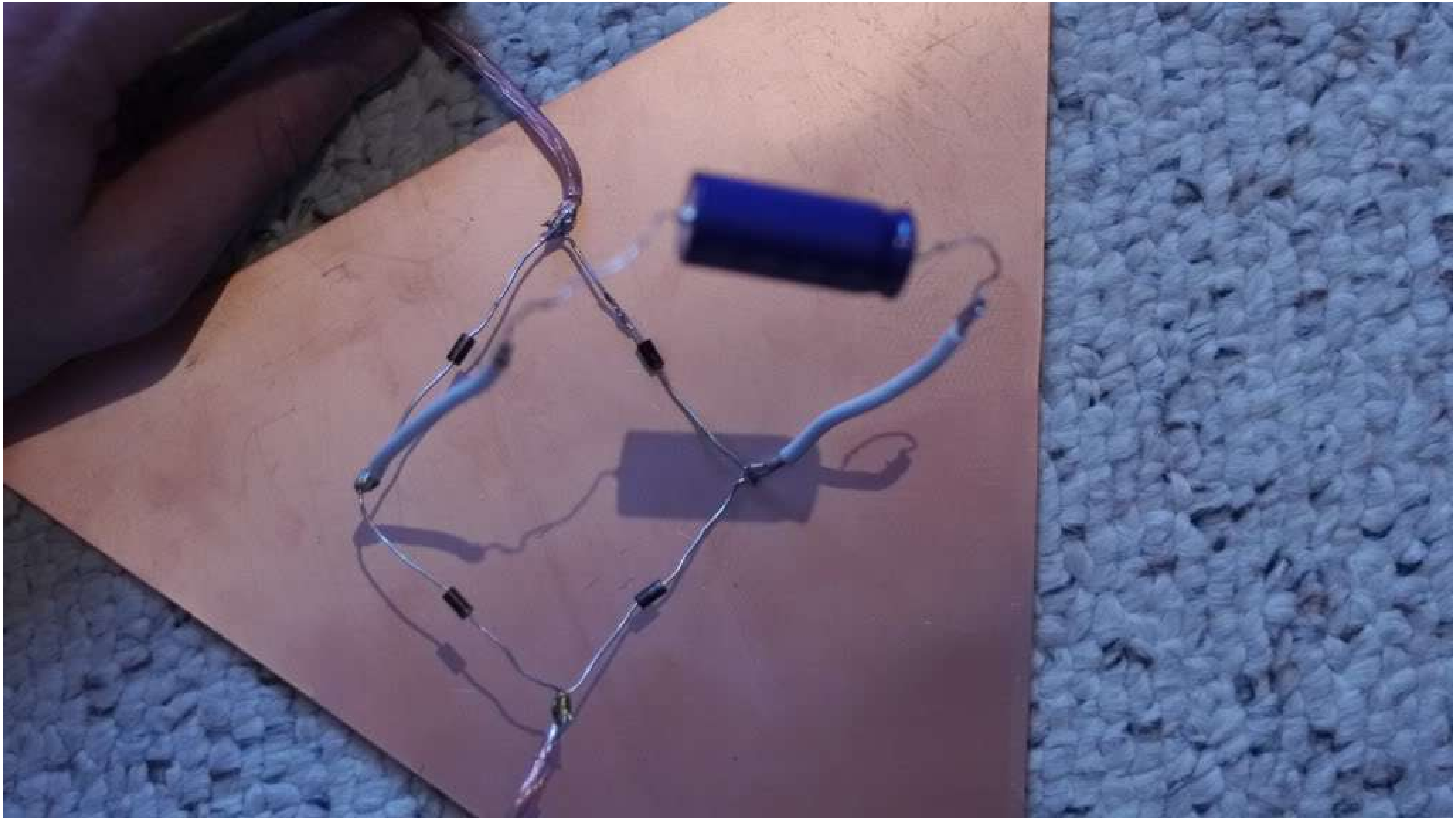
^^^liquid nails to plug the hole, to keep rain out

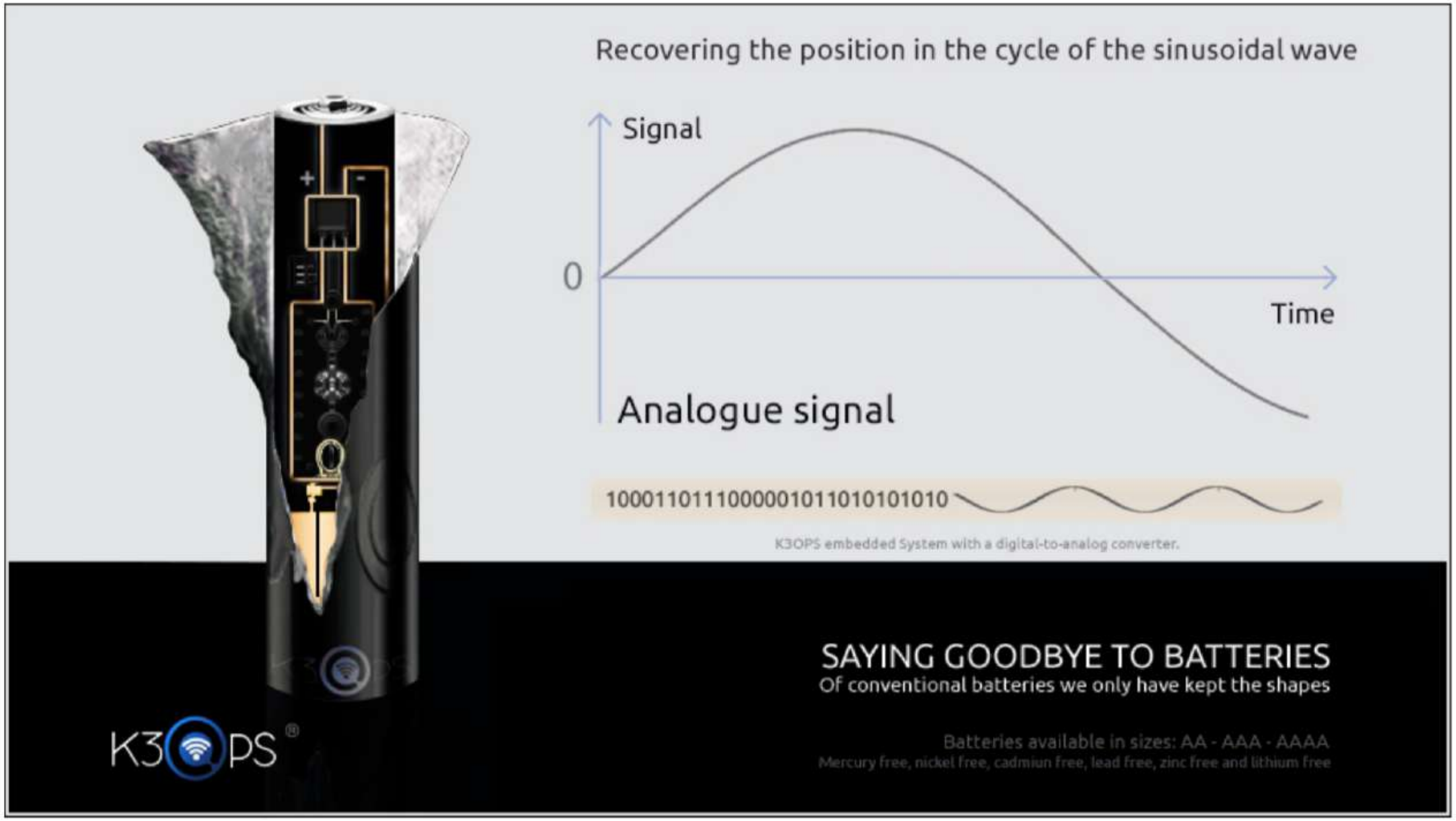
^^^view of the circuit , lid off

^^^ testing the cap 2.25volts (now at 2.81volts) with 3 antennas



^^^these are the pieces of copper that gets buried in the ground they syupply the (-) of electricity





An electromagnetic field uses the photon as an elementary particle to transmit force. It combines:

- **A magnetic field** *force resulting from the movement of loads μT.*
- **An electric field** *force created by the attraction of repulsion loads, measured in volts per meter - V/m.*

With an energy determined according to the speed of light, the RF are by far the best medium to transmit any kind of information.

The multiplication of wireless communications systems in our environment ensures sufficient microwave leakages to harvest from the ambiant and enough energy to convert into DC electricity. Electromagnetic fields are everywhere and since they carry energy, they became the best candidate to deliver an endless source of renewable energy.

$\vec{B}$ is the magnetic induction expressed in T refered to **Nikola Tesla**, "Father of Free Energy", which is at the origin of the electromagnetism.

Using meta-materials combined with nanotechnology has deeply increased the performance and miniaturization of rectennas embedded in K3OPS system. Our products operate autonomously, offering an endless supply of green energy in a respectful and environment-friendly approach.

1 - UNIQUE ID

Each K3OPS' product has a personal identification, which allows as well information exchange, management of the storage unit, the encryption protocols and remote control by means of applications dedicated to the different modes of system functions. This leads to a multitude of choices from direct power, power supply on demand or to power on a scheduled basis for Home Automation.

2 - THE ANTENNAS

Multilayer antennas network* - both wide-band and multi-band operation - working in cooperative relay scavenging ranges between 0.2 to 5.8 GHz (covering radiation from all of domestic appliances) and the use of other standard & specific protocol allowing signal isolation optimized for direct digital-to-analog conversion**.

3 - DIELECTRIC RESONATORS

Breaking the electric field symmetric in dielectric materials *** by acceleration of electrons under the action of specific frequencies, that warps the materials generating an electromagnetic field as a powerful resonator. Since a resonator is also a transmitter they make very efficient and also extremely tiny antennas.

4 - DYNAMIC FREQUENCIES SELECTION

Constant analysis of the environment based on any ambient changes, ensure self-correction of the frequencies to harvest in the appropriate source without interfering with any other wireless communication systems nearby.

5 - DOWNTIME POWER STAGES OPTIMIZED

Intelligent power management controlled by a microcontroller to optimize system-level power, an adaptive dead-time control between the phases with LP standby mode that shuts down most of the digital and analog circuitry and logarithmic step sizes between outputs with complex ultra-speed pulsed MrC digital modulation for low noise, increasing beam forming gain recovery.

6 - ASYMMETRY CORRECTION

The use of metamaterial for their electromagnetic properties, offer a signal isolation optimized for the asymmetry correction at the last stage of the harmonic in the ripples ensure a stable, efficient and a proper output DC.

** Rectenna invented in 1964 by William C. Brown*

*** Based from Alexander Graham Bell researches.*

**** Pierre Curie Dissymmetry Principle.*

EMF

K3OPS endlessly detects all ambient RF

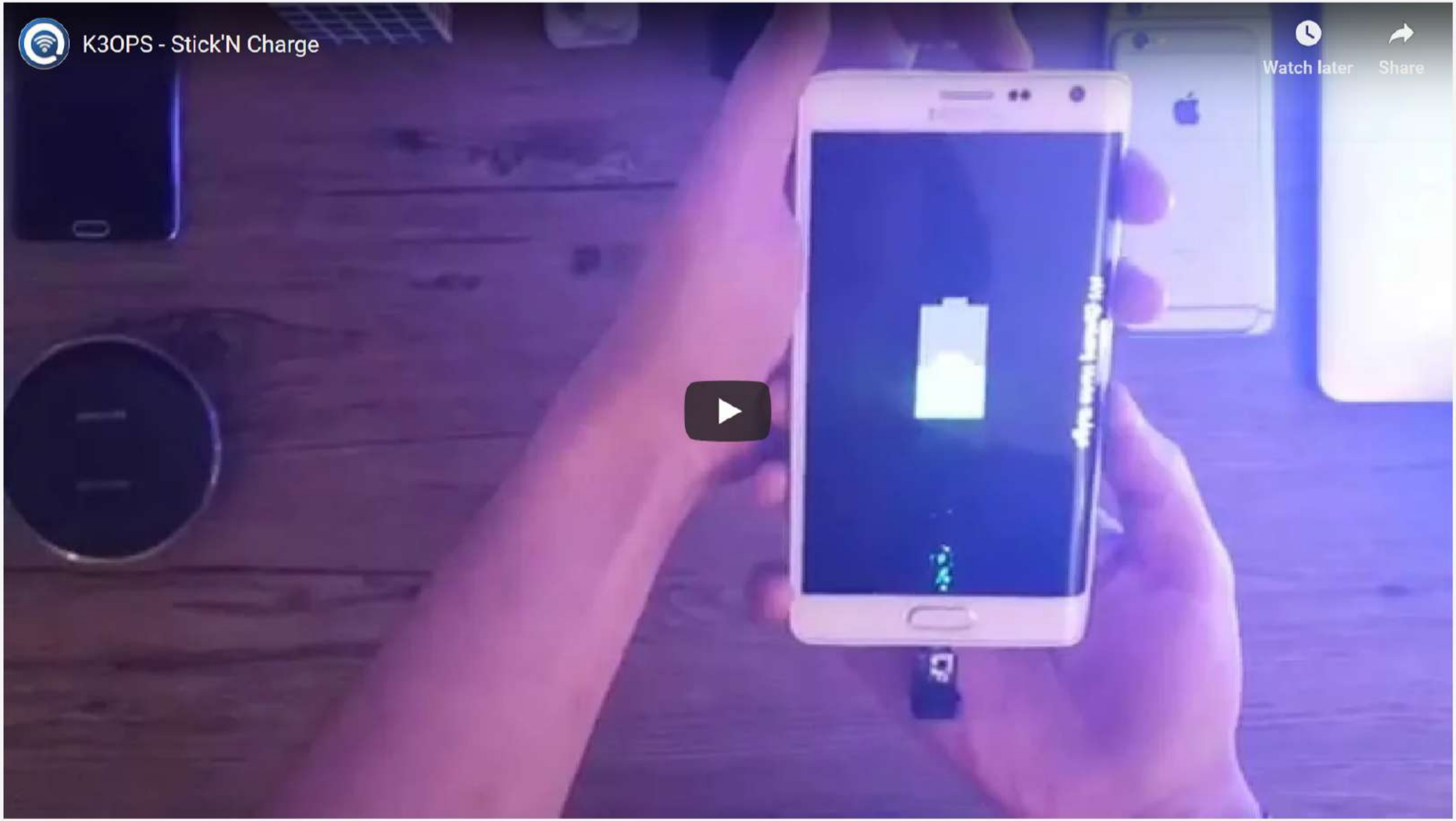
TO CONVERT

K3OPS converts RF to DC

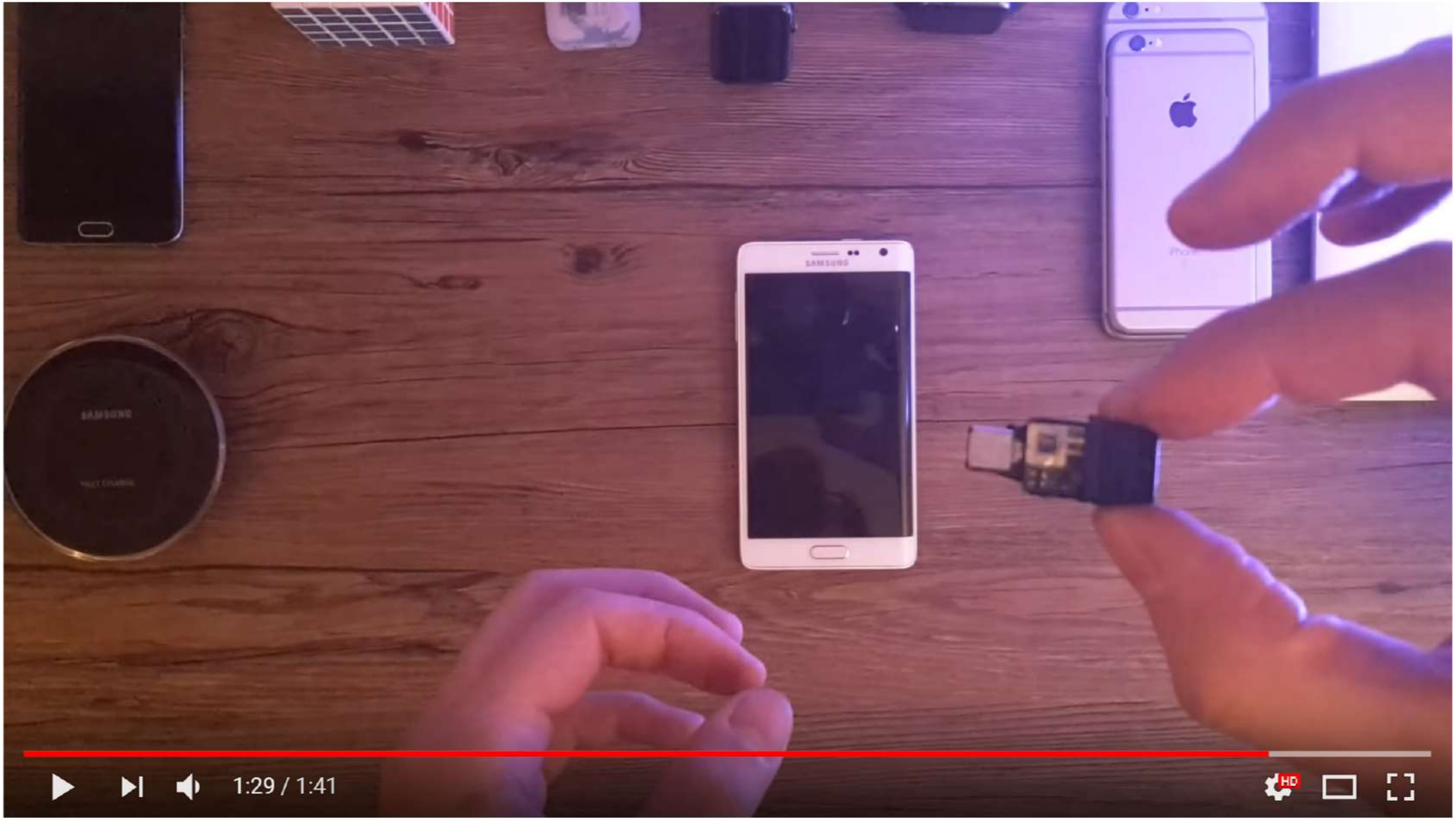
POWER

K3OPS runs or charges all electronic devices

Stick'N Charge™ provides a constant charge to any smartphones



Stick'N Charge™ to power source lights or cellphone with ambient RF



K3OPS - Stick'N Charge

OUR PRODUCTS

K3OPS BATTERY

AN ENDLESS SUPPLY OF ENERGY

That replaces all batteries. Any shapes of batteries including button cell

SQUID

THE WELLNESS WRISTBAND

A key element of education to cope with E-smog issues to develop healthy habits

K3-CASE

CHARGE YOUR PHONE WITH RF

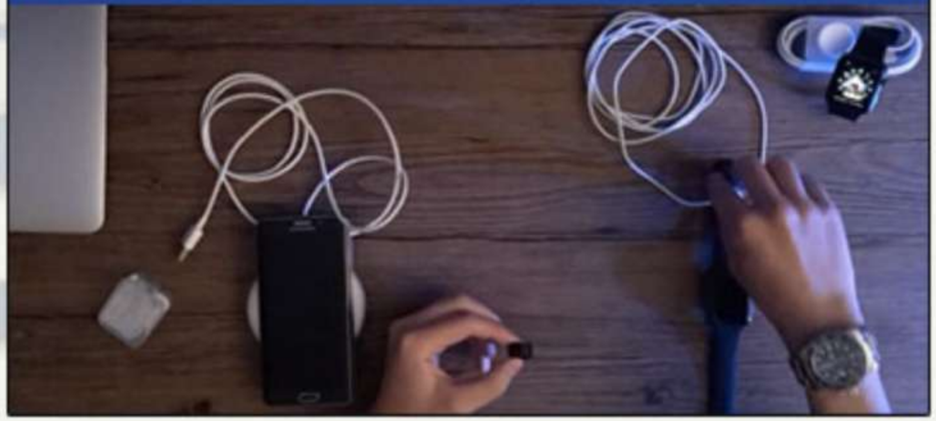
You won't have to worry about the battery capacity or to seek for an outlet

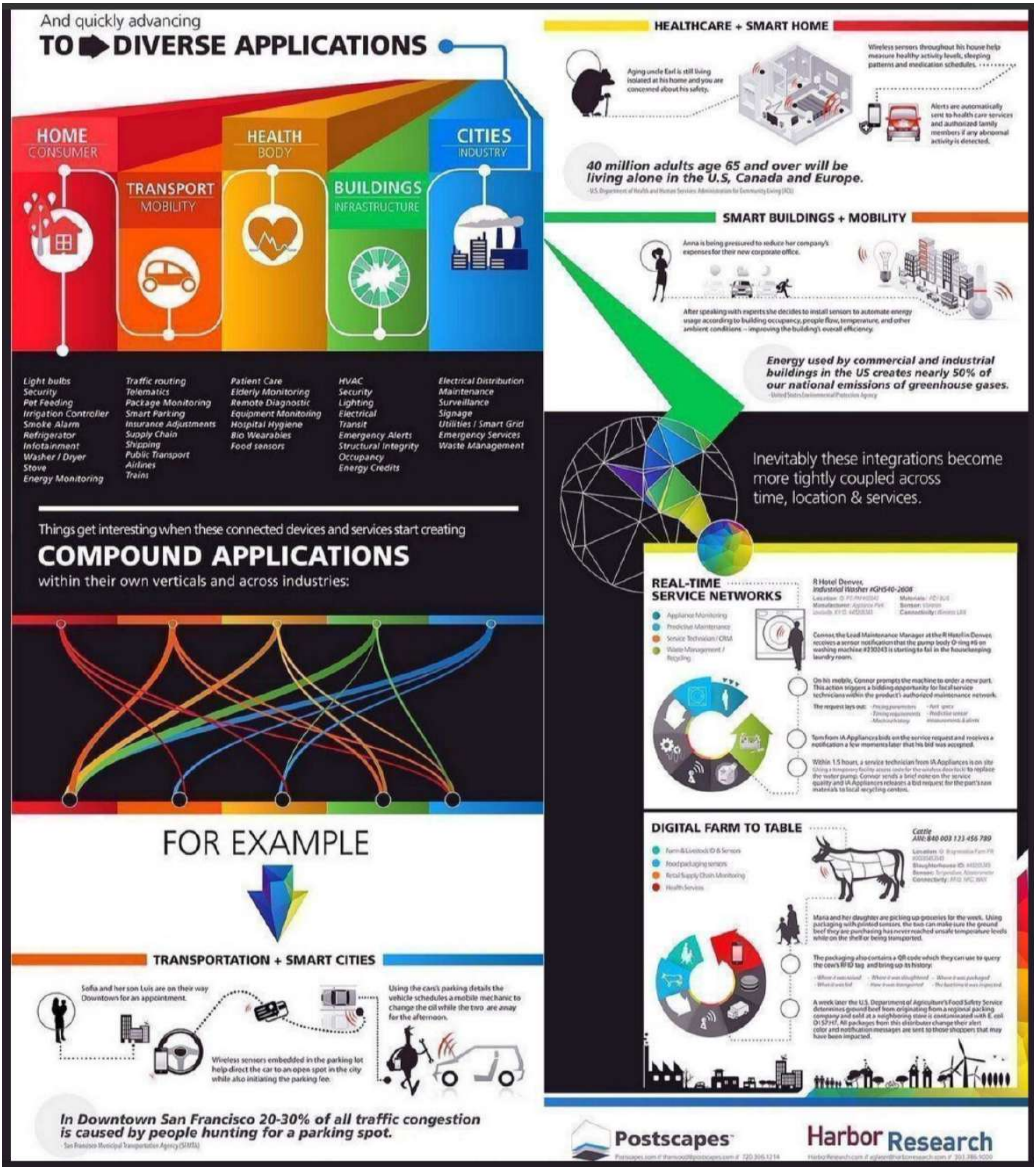
STICK'N CHARGE - ENERGY ON THE MOVE

Stick'N Charge is the most efficient RF Energy Harvester in the market.

Energy On the Move

Offering a never-ending supply of green energy to power or to charge any kind of smartphones and all connected devices.





And quickly advancing
TO DIVERSE APPLICATIONS
HOME
CONSUMER
TRANSPORT
MOBILITY
HEALTH
BODY
BUILDINGS
INFRASTRUCTURE
CITIES
INDUSTRY
Light bulbs
Security
Pet Feeding
Irrigation Controller
Smoke Alarm
Refrigerator
Infotainment
Washer / Dryer
Stove
Energy Monitoring
Traffic routing
Telematics
Package Monitoring
Smart Parking
Insurance Adjustments
Supply Chain
Shipping
Public Transport
Airlines
Trains
Patient Care
Elderly Monitoring
Remote Diagnostic
Equipment Monitoring
Hospital Hygiene
Bio Wearables
Food sensors
HVAC
Security
Lighting
Electrical
Transit
Emergency Alerts
Structural Integrity
Occupancy
Energy Credits
Electrical Distribution
Maintenance
Surveillance
Signage
Utilities / Smart Grid
Emergency Services
Waste Management
Things get interesting when these connected devices and services start creating
COMPOUND APPLICATIONS
within their own verticals and across industries:
FOR EXAMPLE
TRANSPORTATION + SMART CITIES
Sofia and her son Luis are on their way Downtown for an appointment.
Wireless sensors embedded in the parking lot help direct the car to an open spot in the city while also initiating the parking fee.
Using the car's parking details the vehicle schedules a mobile mechanic to change the oil while the two are away for the afternoon.
In Downtown San Francisco 20-30% of all traffic congestion is caused by people hunting for a parking spot.
HEALTHCARE + SMART HOME
Aging uncle Earl is still living isolated at his home and you are concerned about his safety.
Wireless sensors throughout his house help measure healthy activity levels, sleeping patterns and medication schedules.
Alerts are automatically sent to health care services and authorized family members if any abnormal activity is detected.
40 million adults age 65 and over will be living alone in the U.S, Canada and Europe.
SMART BUILDINGS + MOBILITY
Anna is being pressured to reduce her company's expenses for their new corporate office.
After speaking with experts she decides to install sensors to automate energy usage according to building occupancy, people flow, temperature, and other ambient conditions – improving the building's overall efficiency.
Energy used by commercial and industrial buildings in the US creates nearly 50% of our national emissions of greenhouse gases.
Inevitably these integrations become more tightly coupled across time, location & services.
REAL-TIME SERVICE NETWORKS
DIGITAL FARM TO TABLE
Postscapes
Harbor Research

Converting Radio waves into electrical power is not a new concept. The so called rectenna was conceived by William C. Brown back in 1964. Rectennas are also widely used today. RFID tags contain a small rectenna to supply the electronics with power when close to a scanner. K3OPS, a startup founded by Xin Wei and Alexandre Despallieres developed a rectenna that is powerful enough to charge a smartphone like the Galaxy S6.

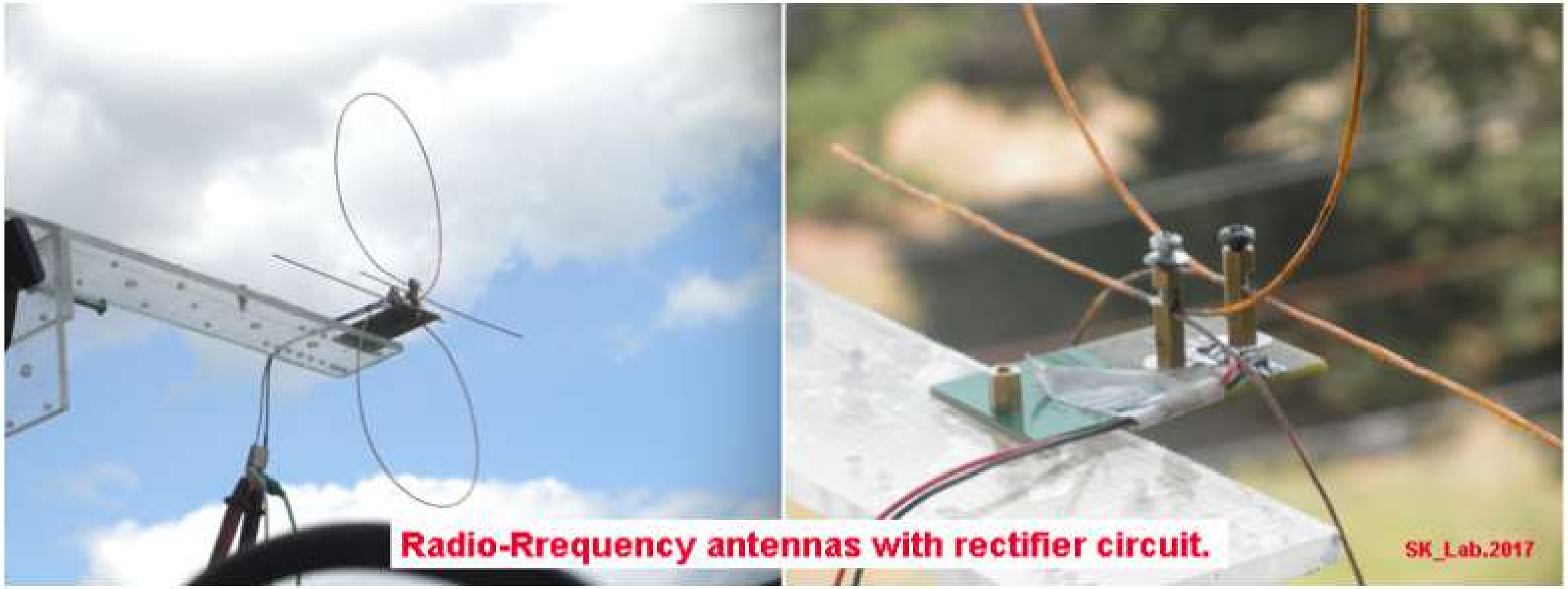
Radio waves are everywhere this days with the abundance of mobile networks and Wi-fi hotspots. Technology that can efficiently harvest that ambient energy can dramatically change how gadgets are powered. K3OPS works on RF energy harvesting smartphone case K3-Case and also on standard battery with integrated RF harvesting technology.

The K3Ops RF energy harvesting technology can tap the energy of WiFi, 4G, Bluetooth, LTE radio waves. As miniaturization will evolve in the future RF harvesting could become the power source for wearable devices such as smartwatches and fitness trackers.

K3Ops will launch the K3-Case in September. The RF energy harvesting smartphone case only works with smartphones that have a QI compliant wireless charging feature like the Galaxy S6. There will be options to configure the K3-Case via an app to optimize the frequencies the case will harvest for energy to avoid interference with other devices.

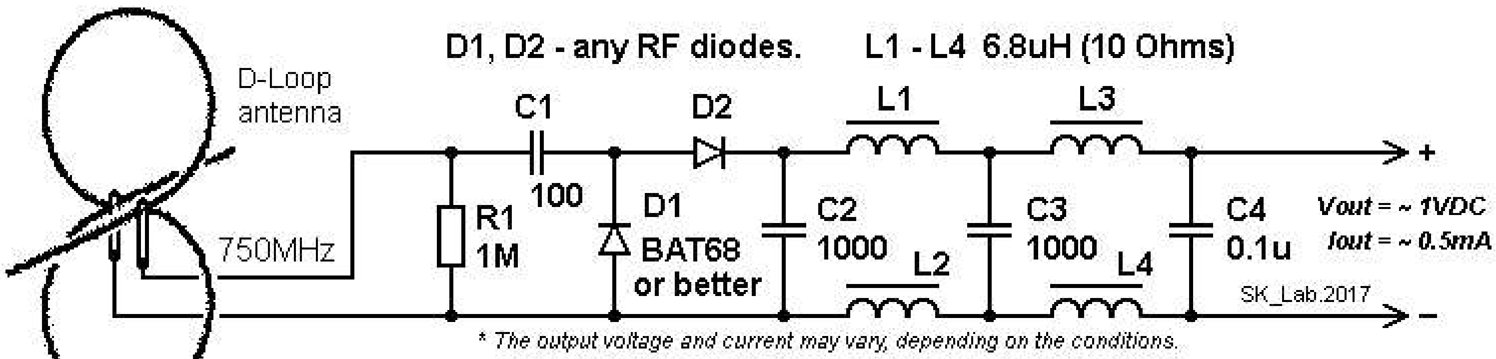
K3Ops' Xin Wei will be a speaker at the upcoming Wearable-Technologies Conference in San Francisco in July. This presentation will be one of the highlights of this conference. We learned that attendees of the K3Ops presentation will be receiving a K3-Case. It will be interesting to learn how far the K3Ops RF energy harvesting technology has been developed into a consumer ready product.

On the banner, two '**Dual**-**Loop**' directional antennas, designed specifically to collect power at 750MHz. One is connected to 100uA (700Ohms) head, and the average current you can see on it. Both antennas have 'on-board' rectifiers.



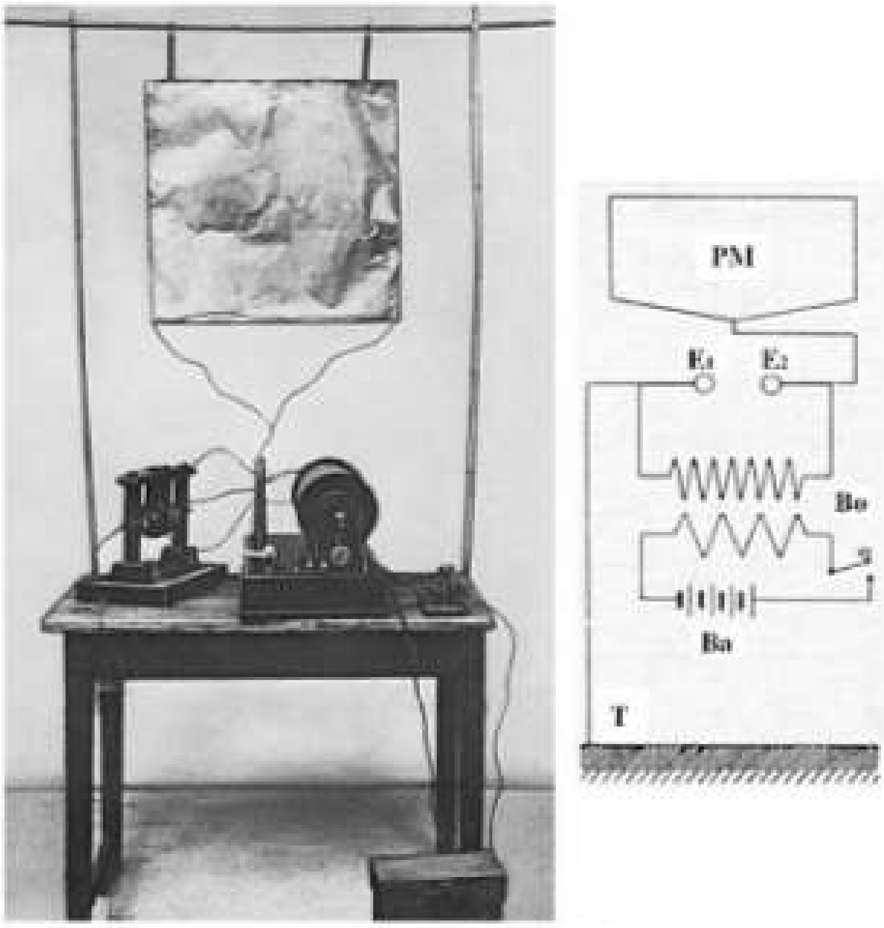
Reality is not as good as we would like. One antenna produces about 1 volt (at 10MOhms), and a current of about 0,4 mA (at 700OHms).

The circuit is simple as a crystal receiver. Diodes with capacitors work as a voltage doubler (rectifier). The remaining inductors and capacitors isolate the output from high frequency.

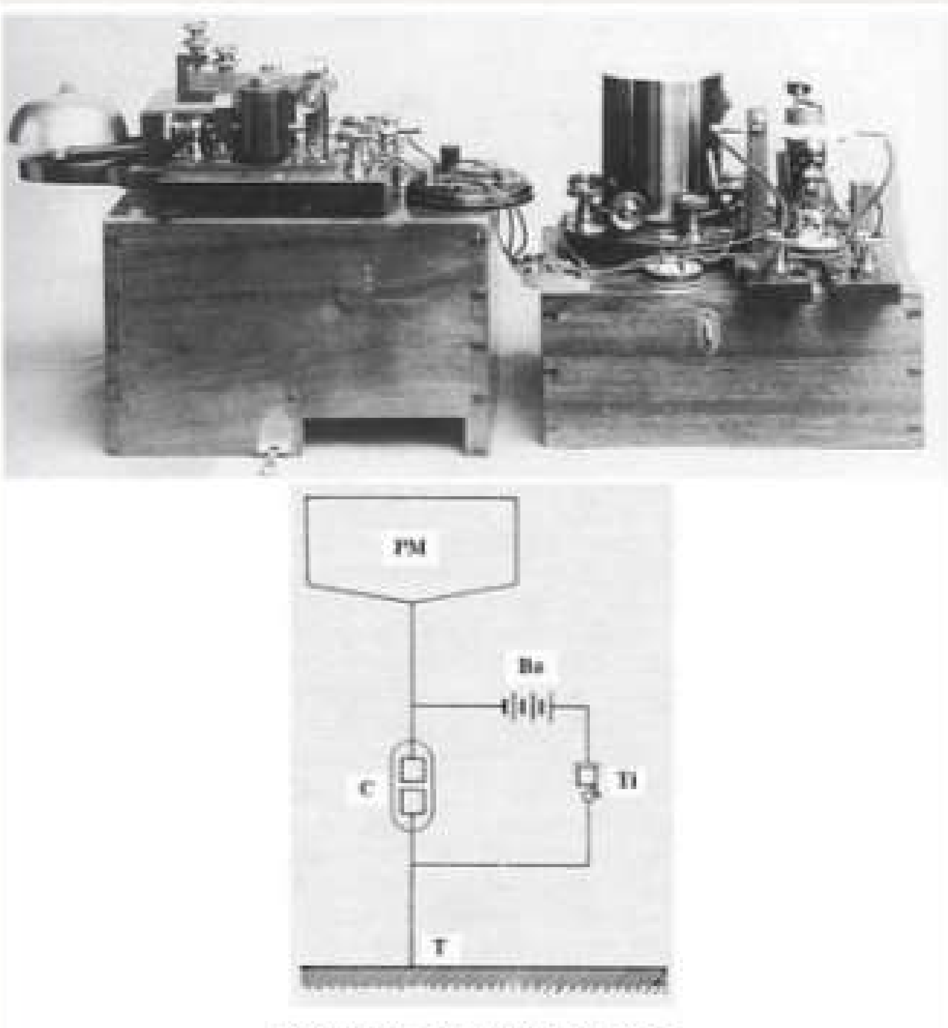


Harvesting RF power. Absorbs energy from cell towers at 750MHz.

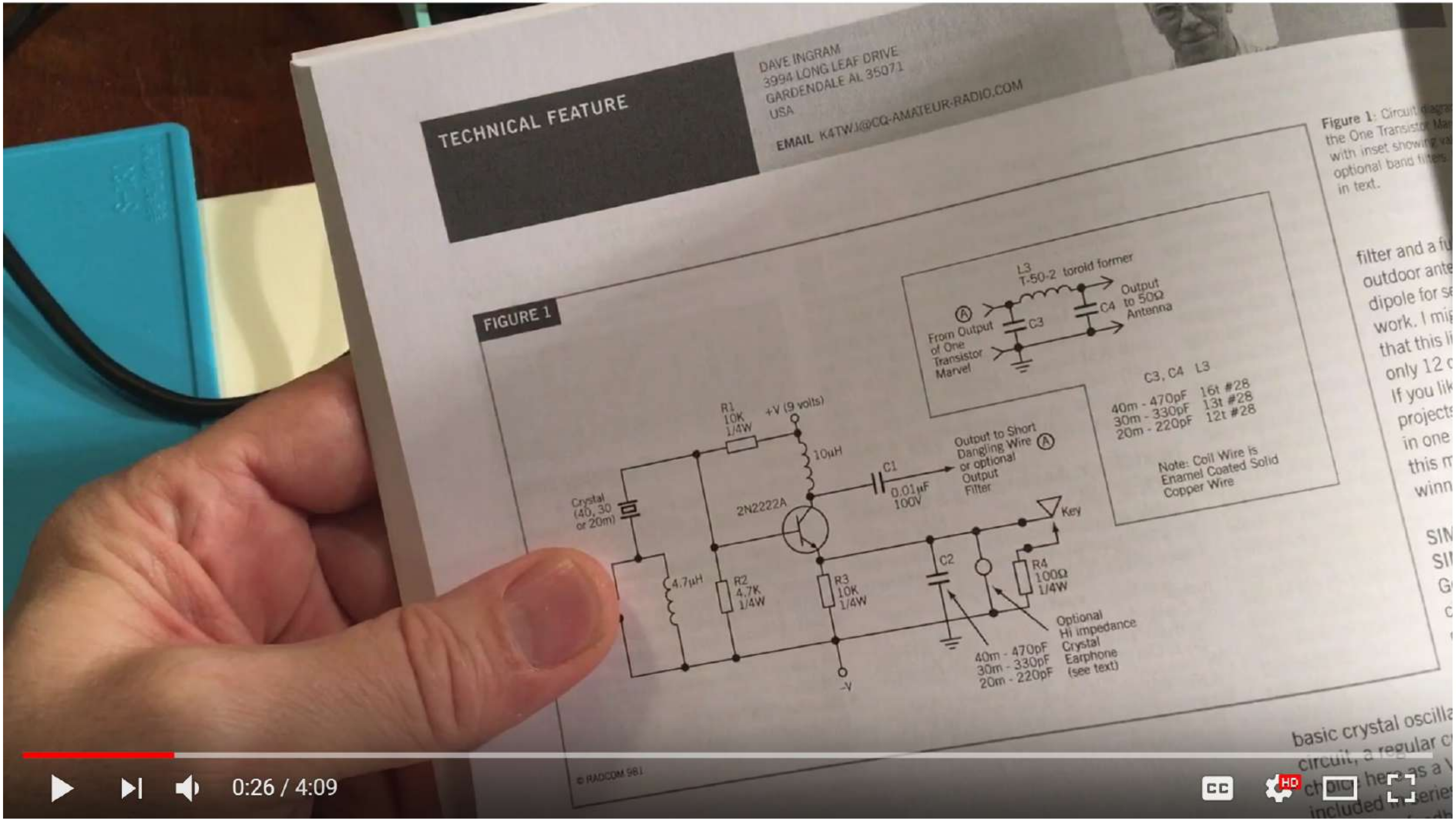
Any RF diodes with junction capacitance less then 1.5pF will be suitable for this application. See the end of this page for a suitable choice.



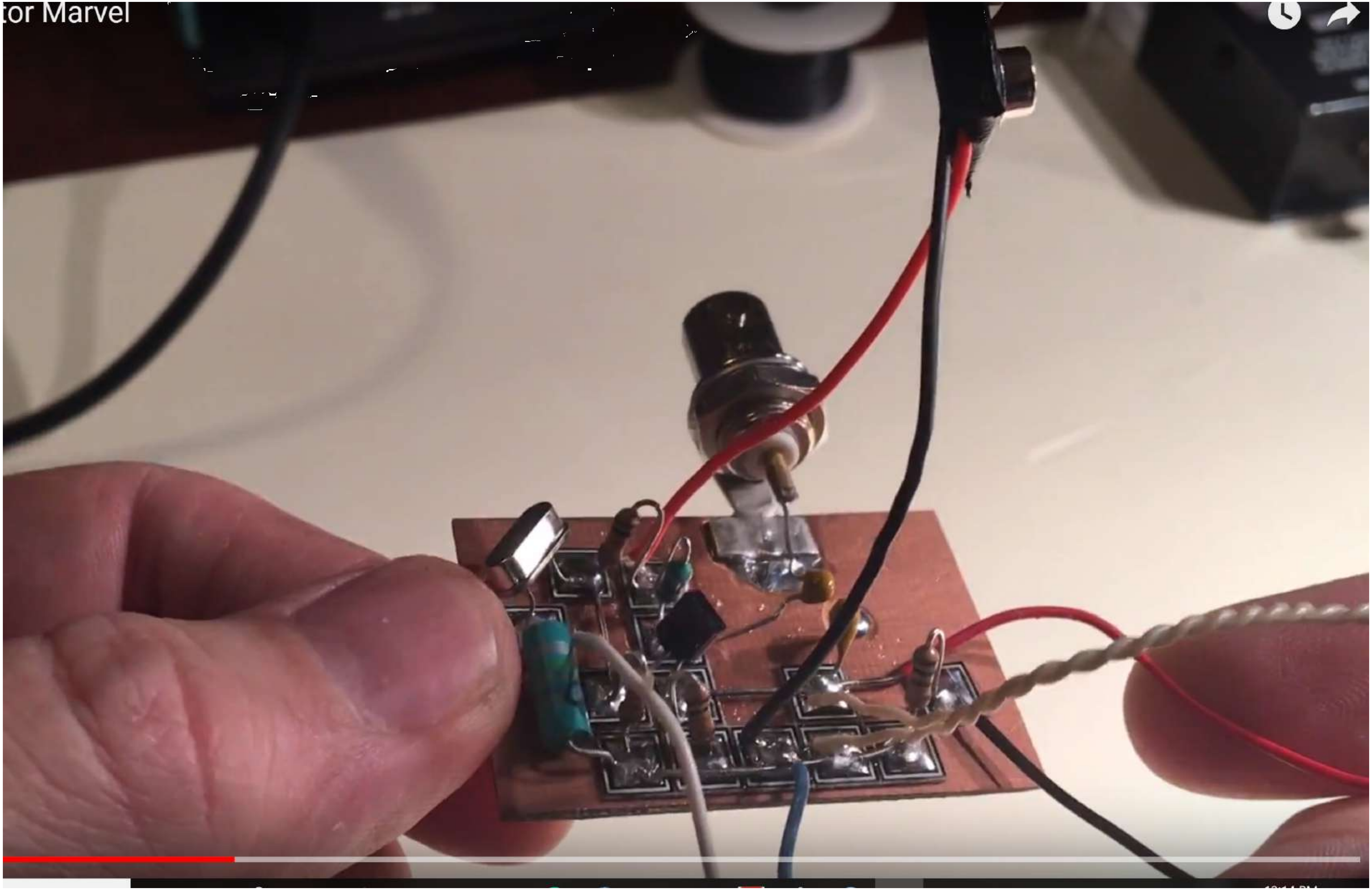
Transmisor Marconi, c. 1895.

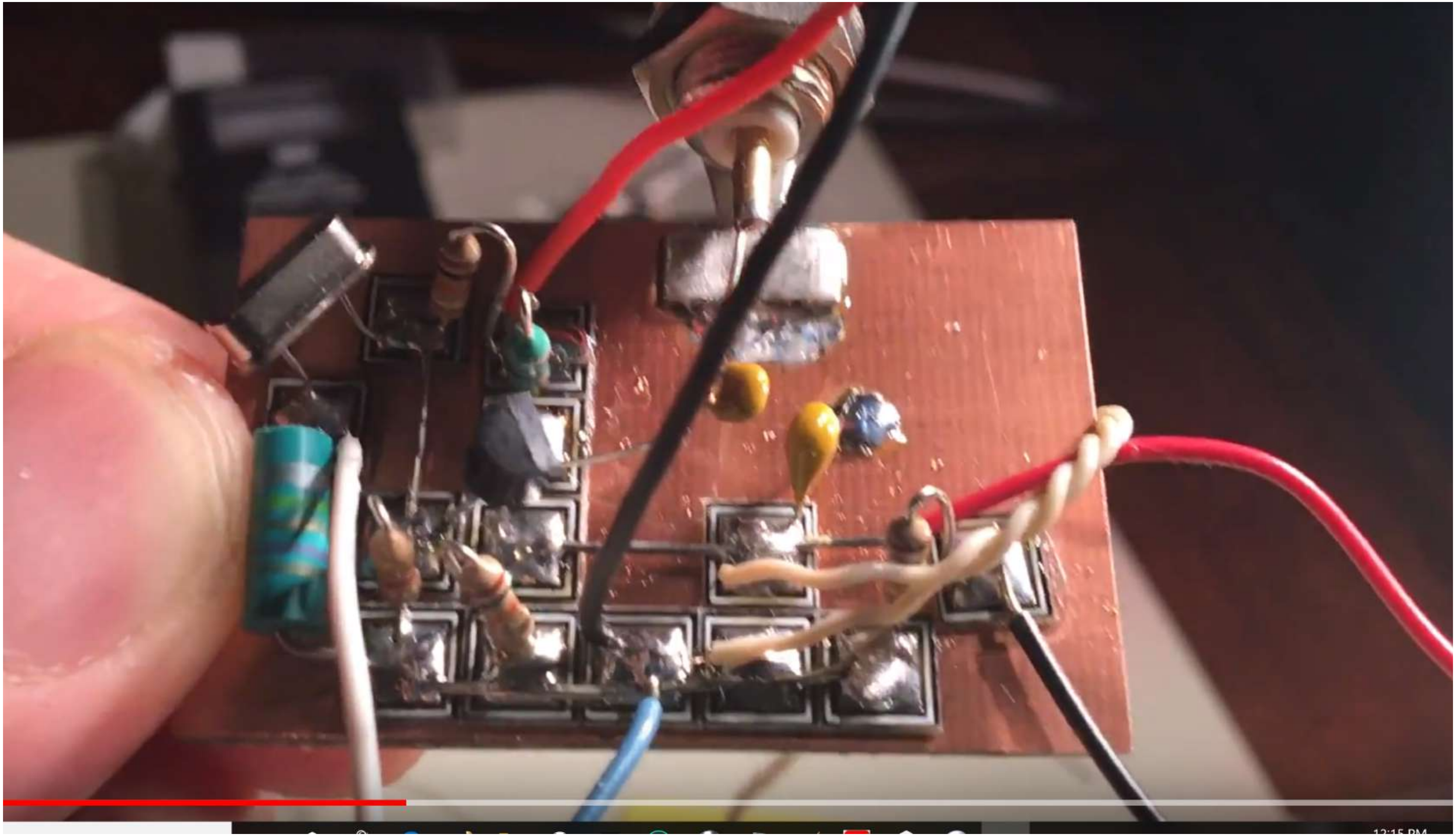


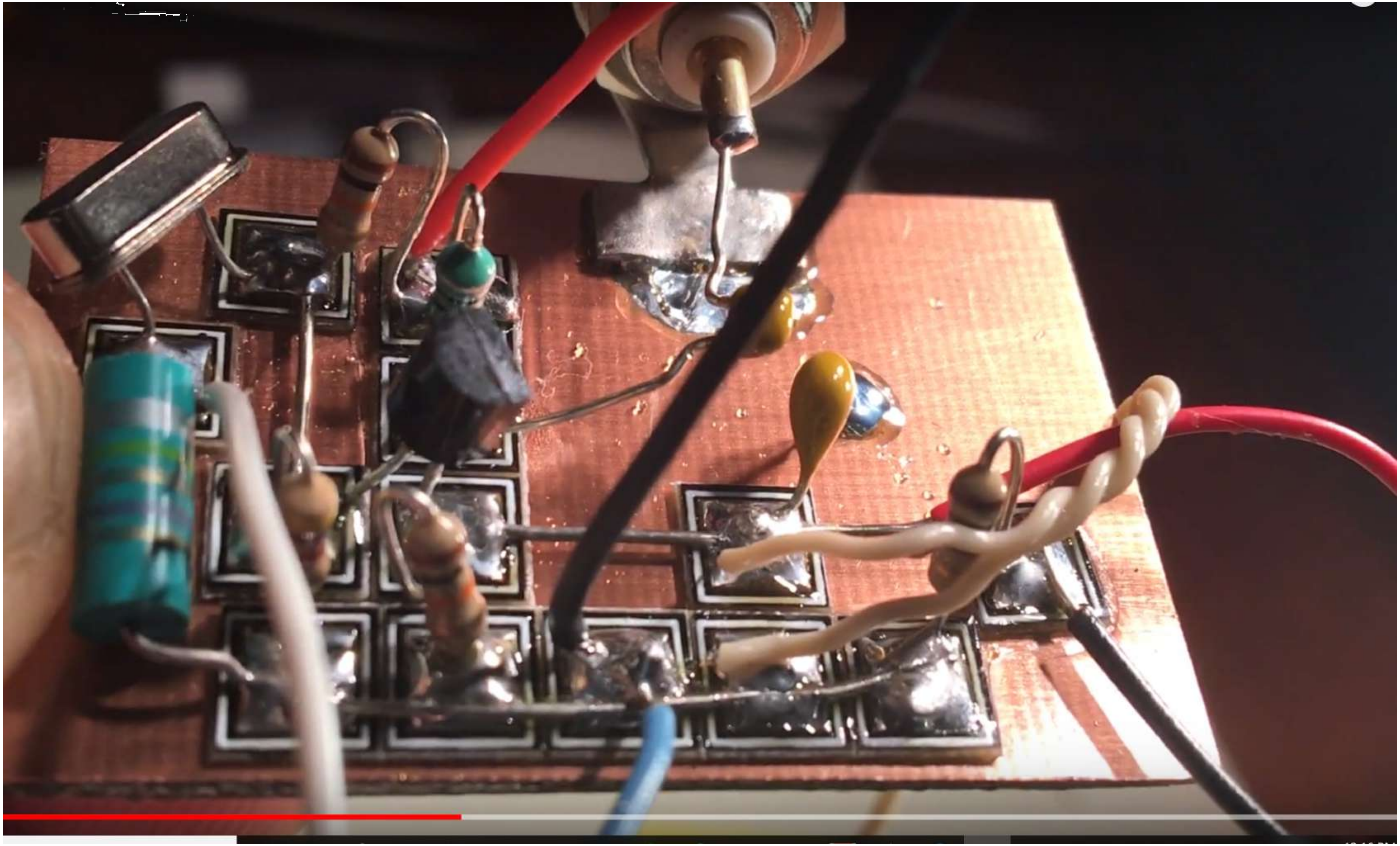
Receptor Marconi, c. 1895.

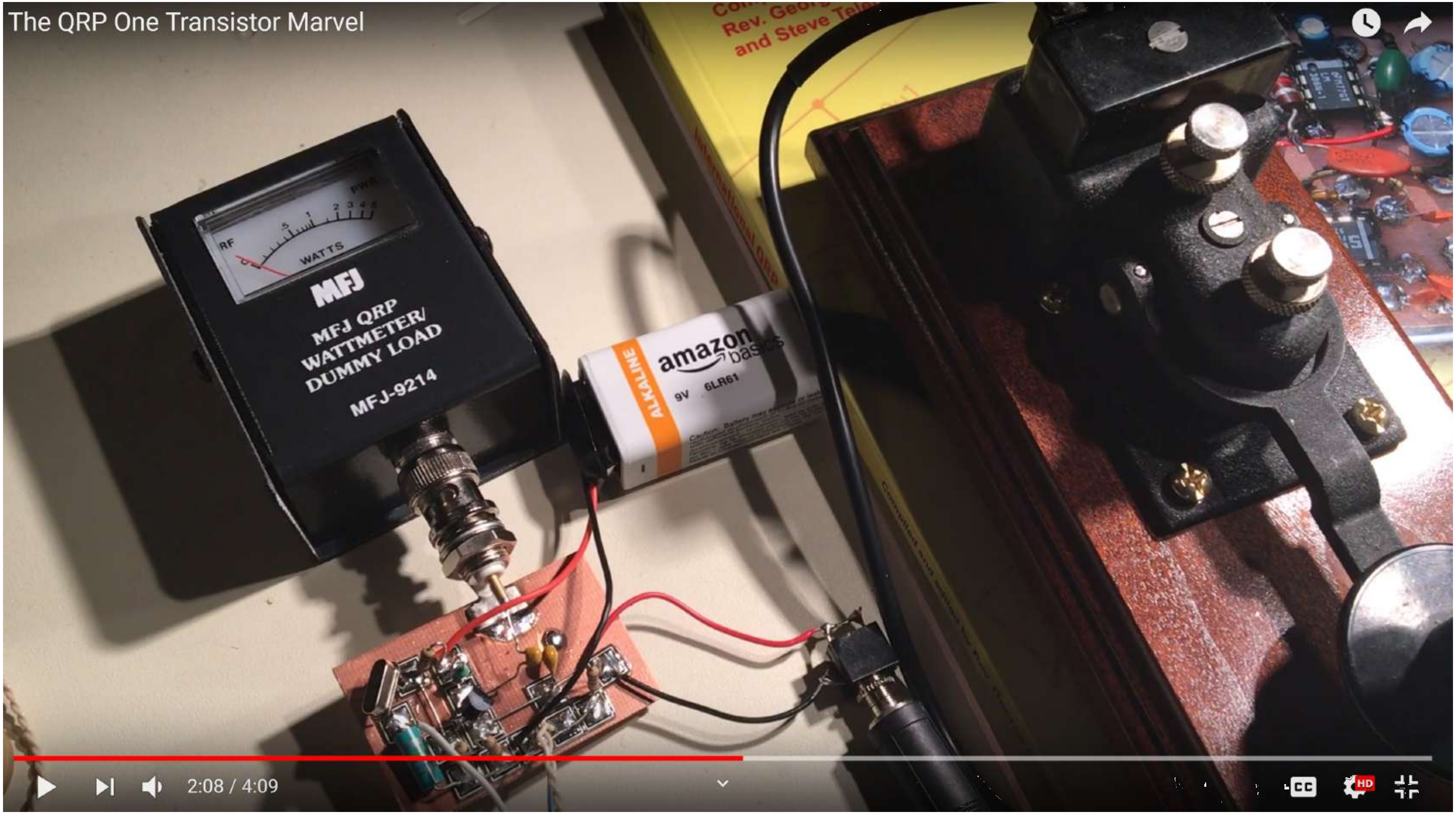


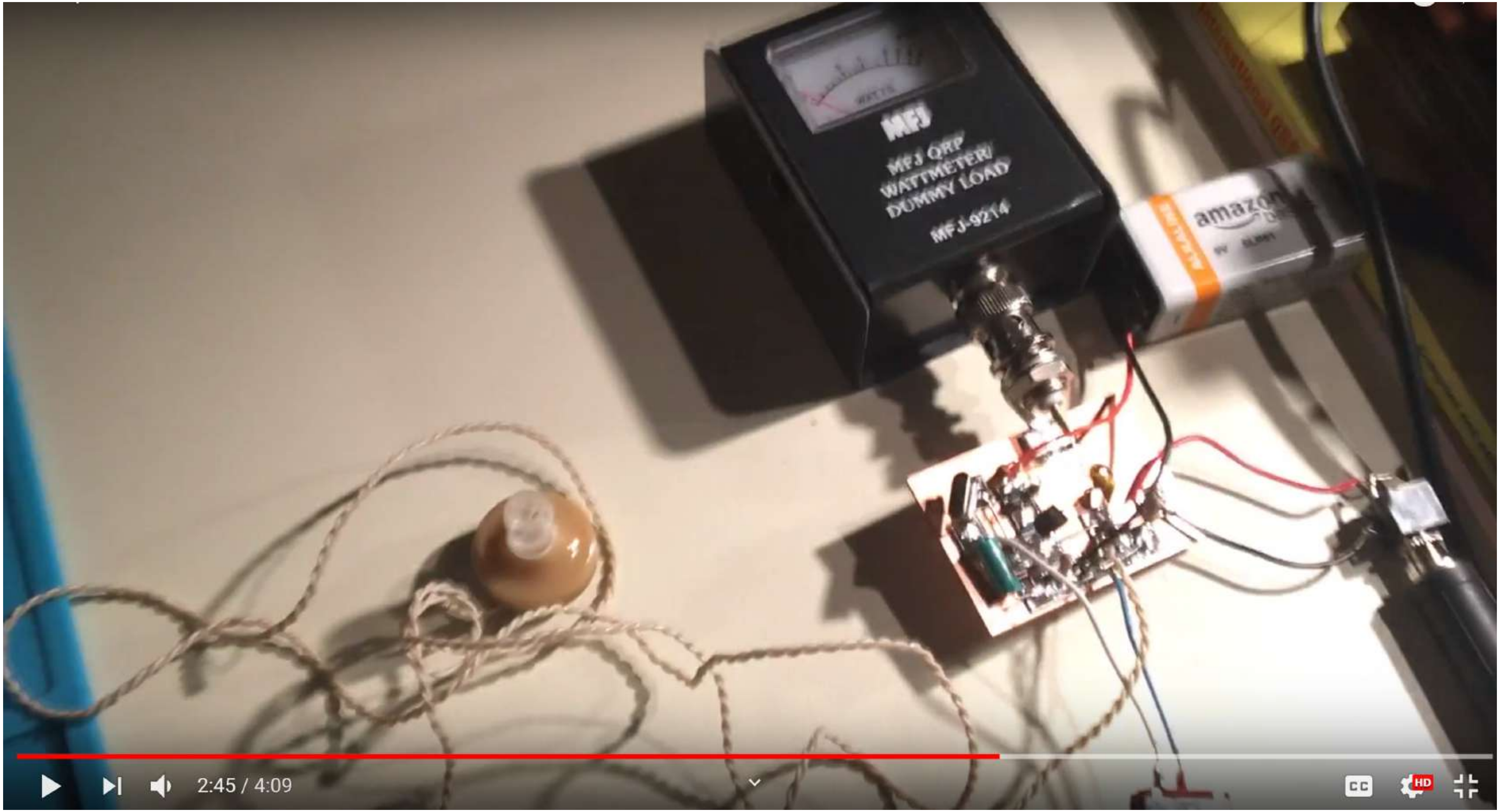
The QRP One Transistor Marvel

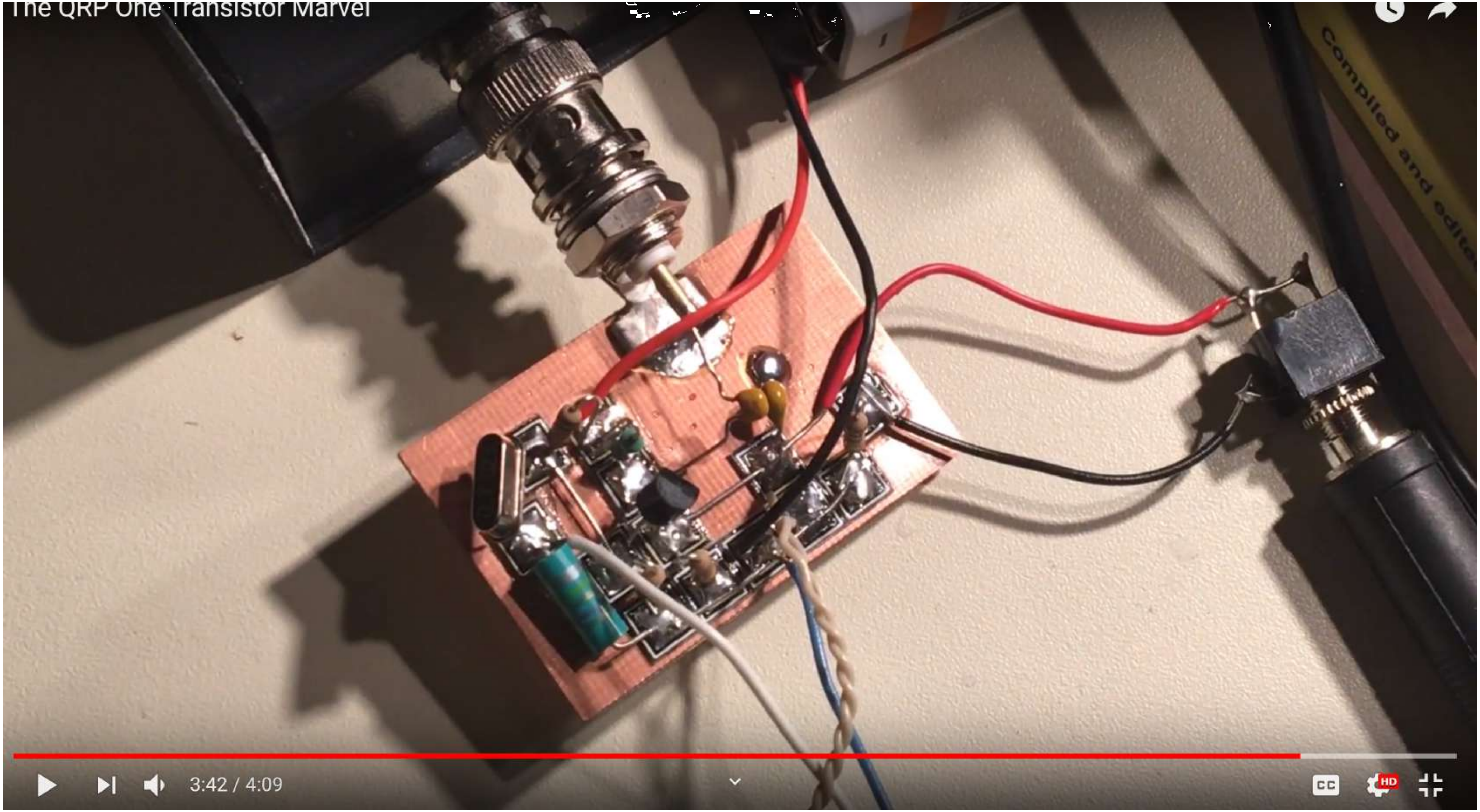

tor Marvel

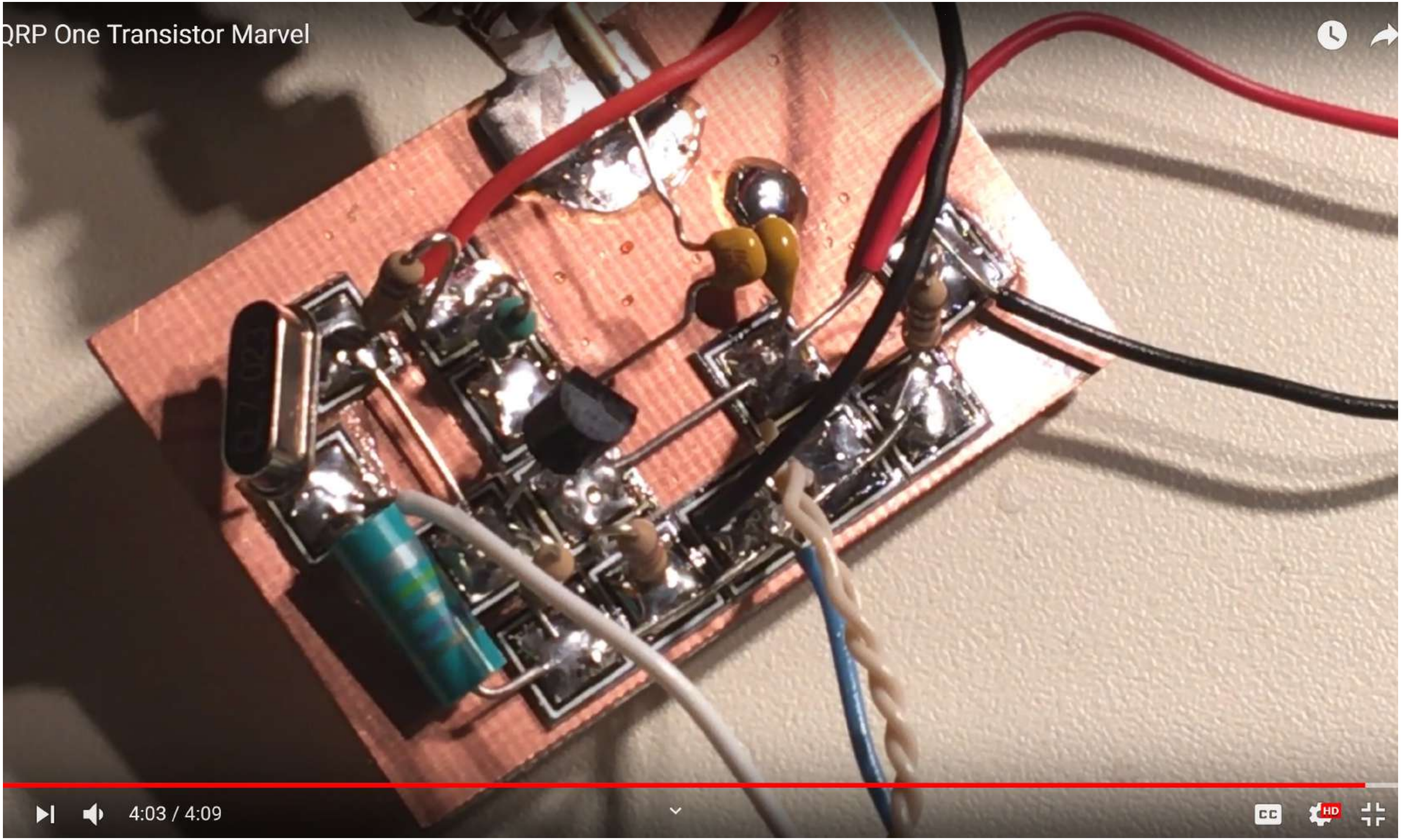





The QRP One Transistor Marvel
RF
WATTS
PWR
MFJ
MFJ QRP
WATTMETER/
DUMMY LOAD
MFJ-9214
ALKALINE
amazon basics
9V 6LR61
2:08 / 4:09


MFJ
MFJ QRP
WATTMETER/
DUMMY LOAD
MFJ-9214
amazon
2:45 / 4:09
HD

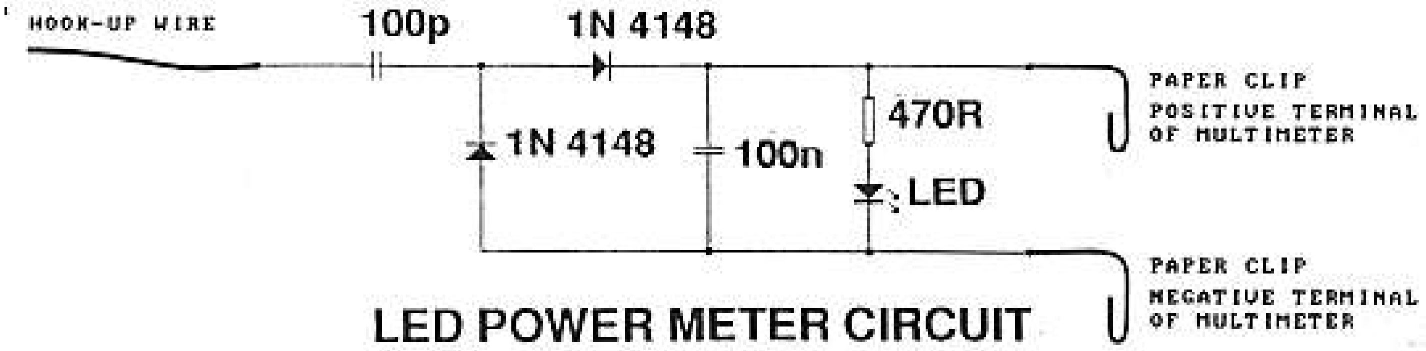

The QRP One Transistor Marvel
3:42 / 4:09
Compiled and edite

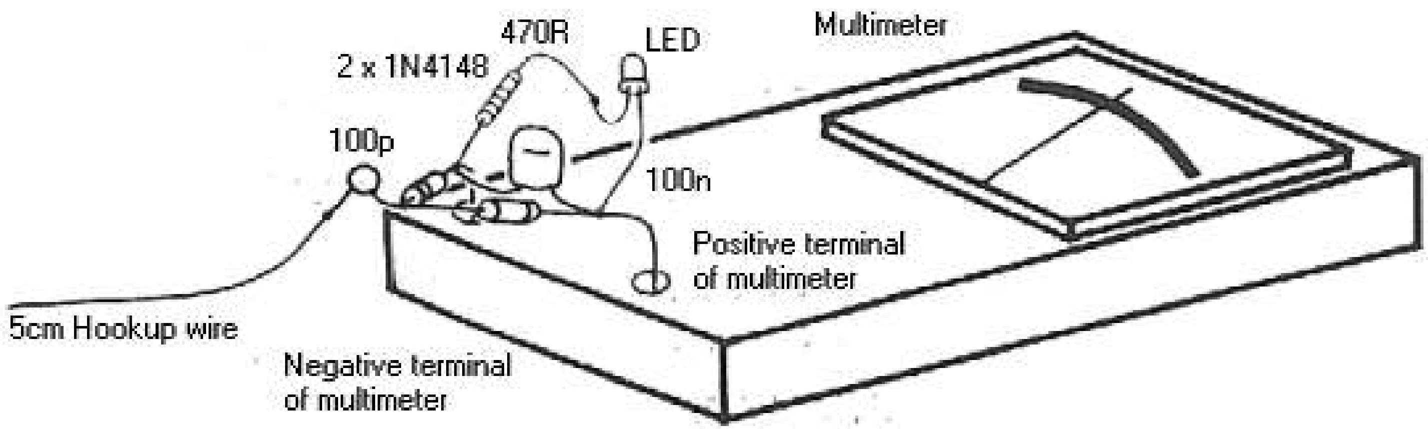

QRP One Transistor Marvel
4:03 / 4:09
CC
HD

What you will need:

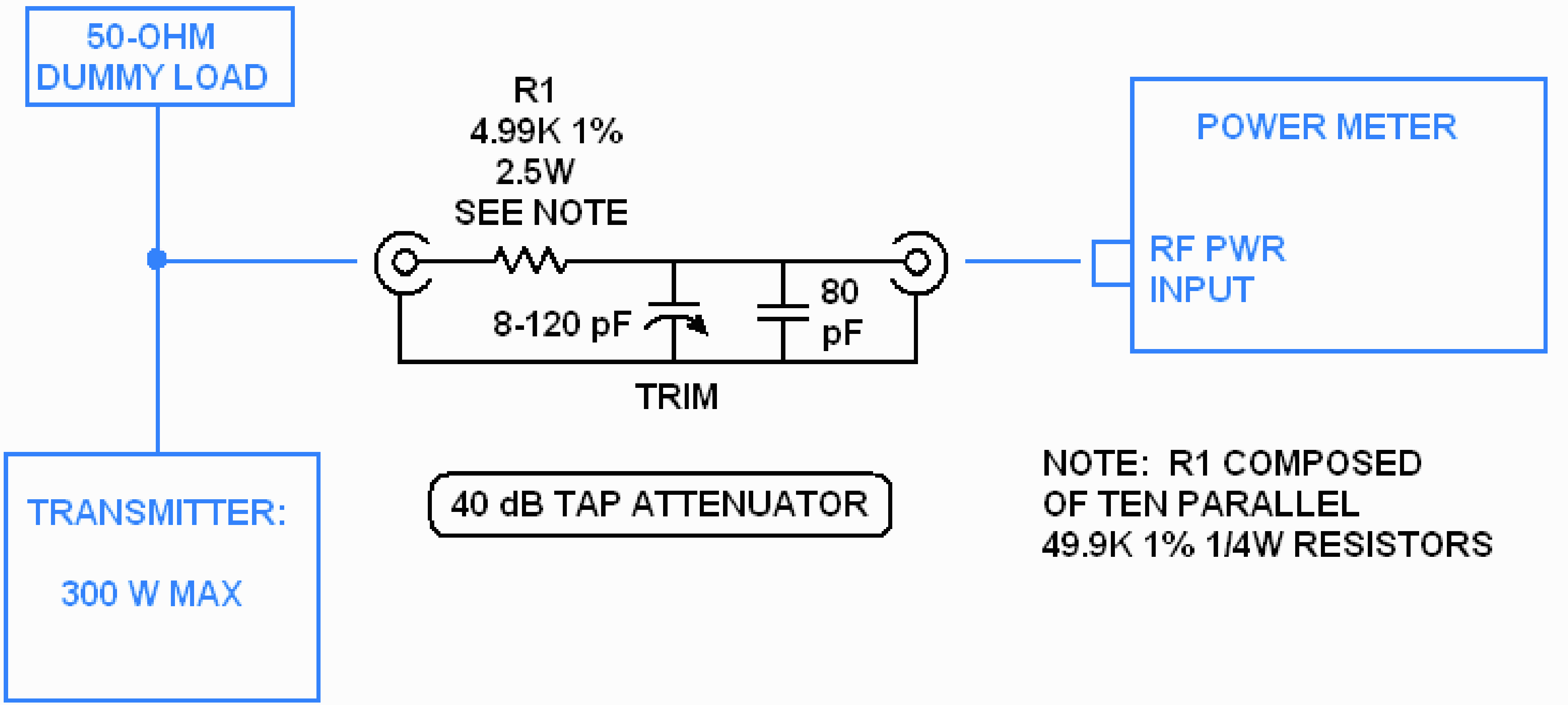
- 1 x 470 ohm resisitor
- 1 x 100p ceramic capacitor
- 1 x 100n greencap capacitor
- 2 x 1N4148 signal diodes
- 1 x 5mm red LED
- 1 x 5cm hook-up wire
- 2 x paper clips

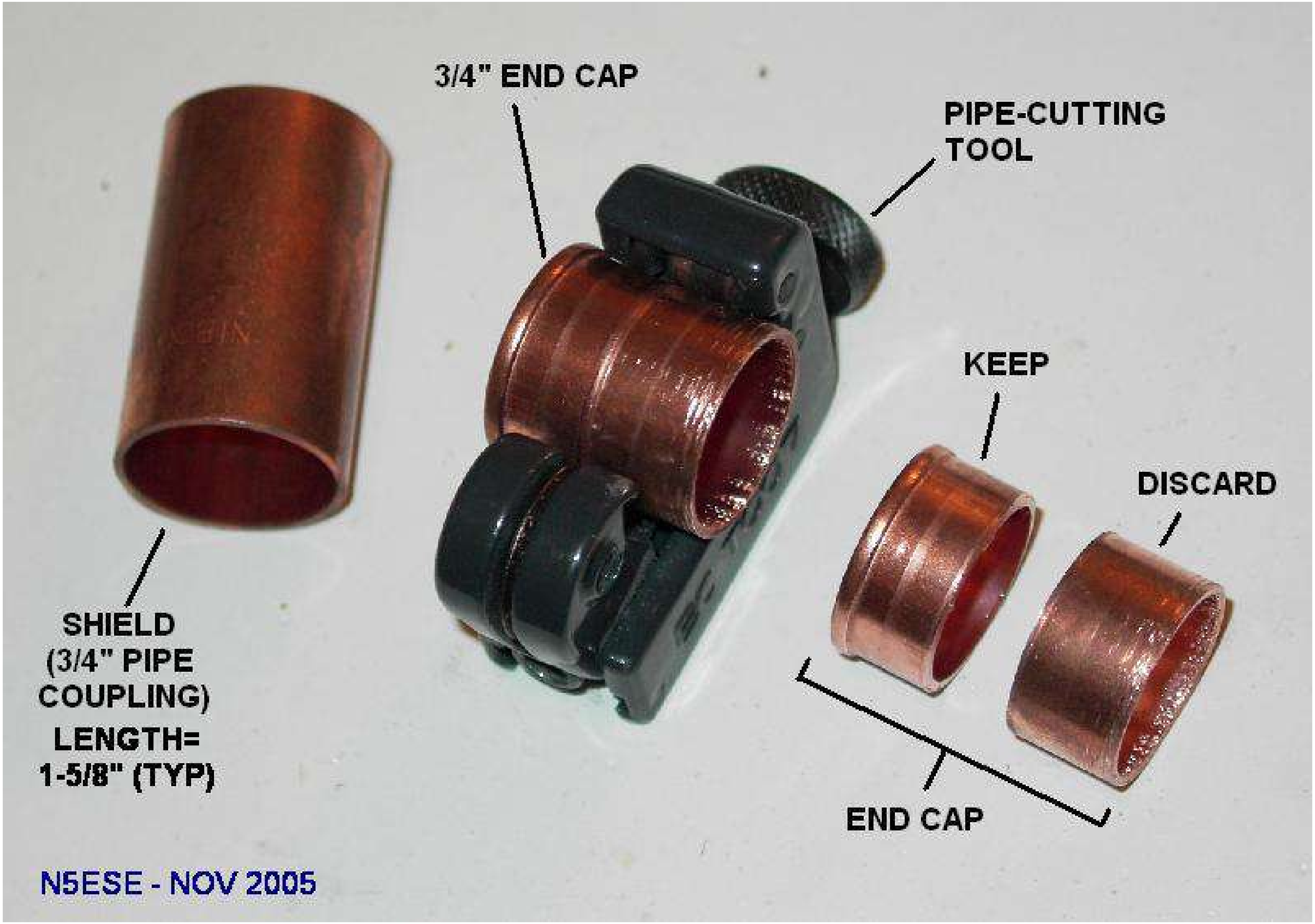
Build the circuit up as shown below:

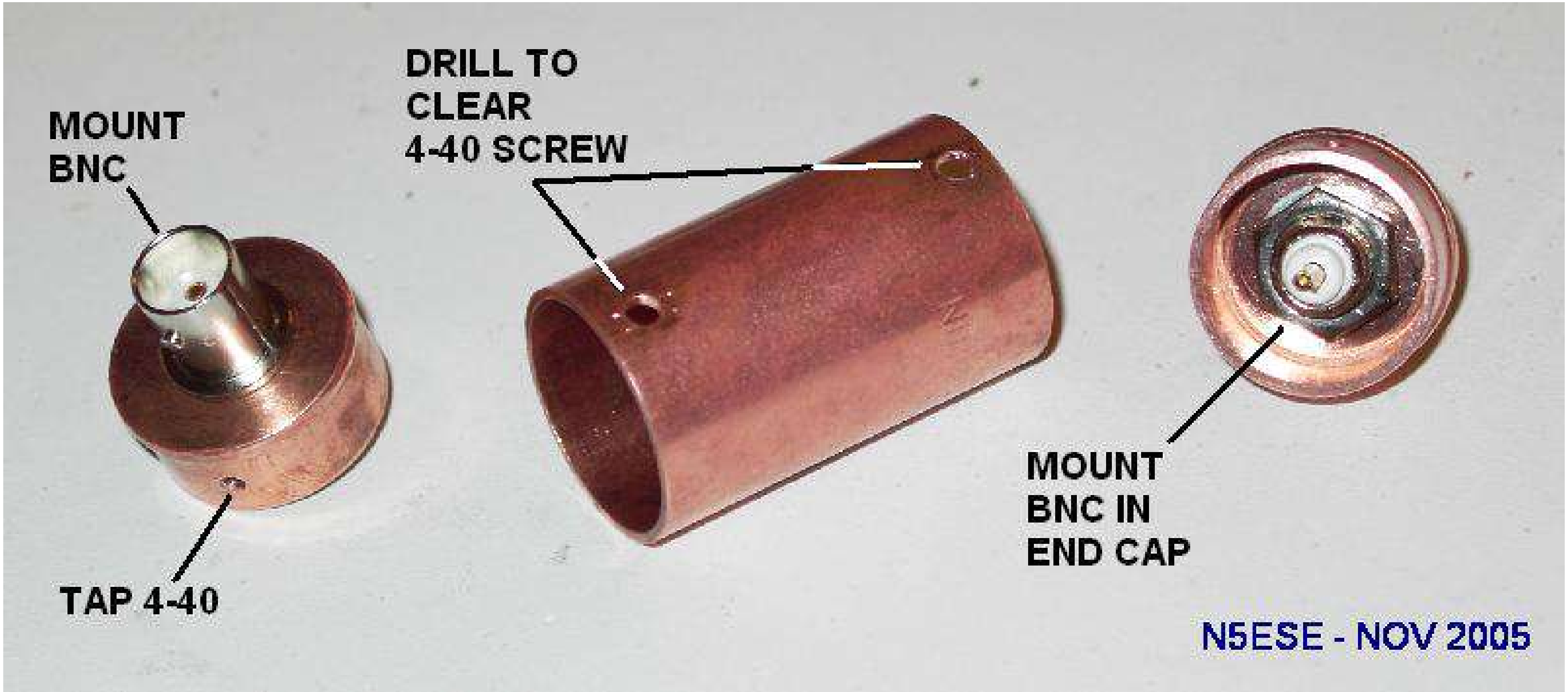


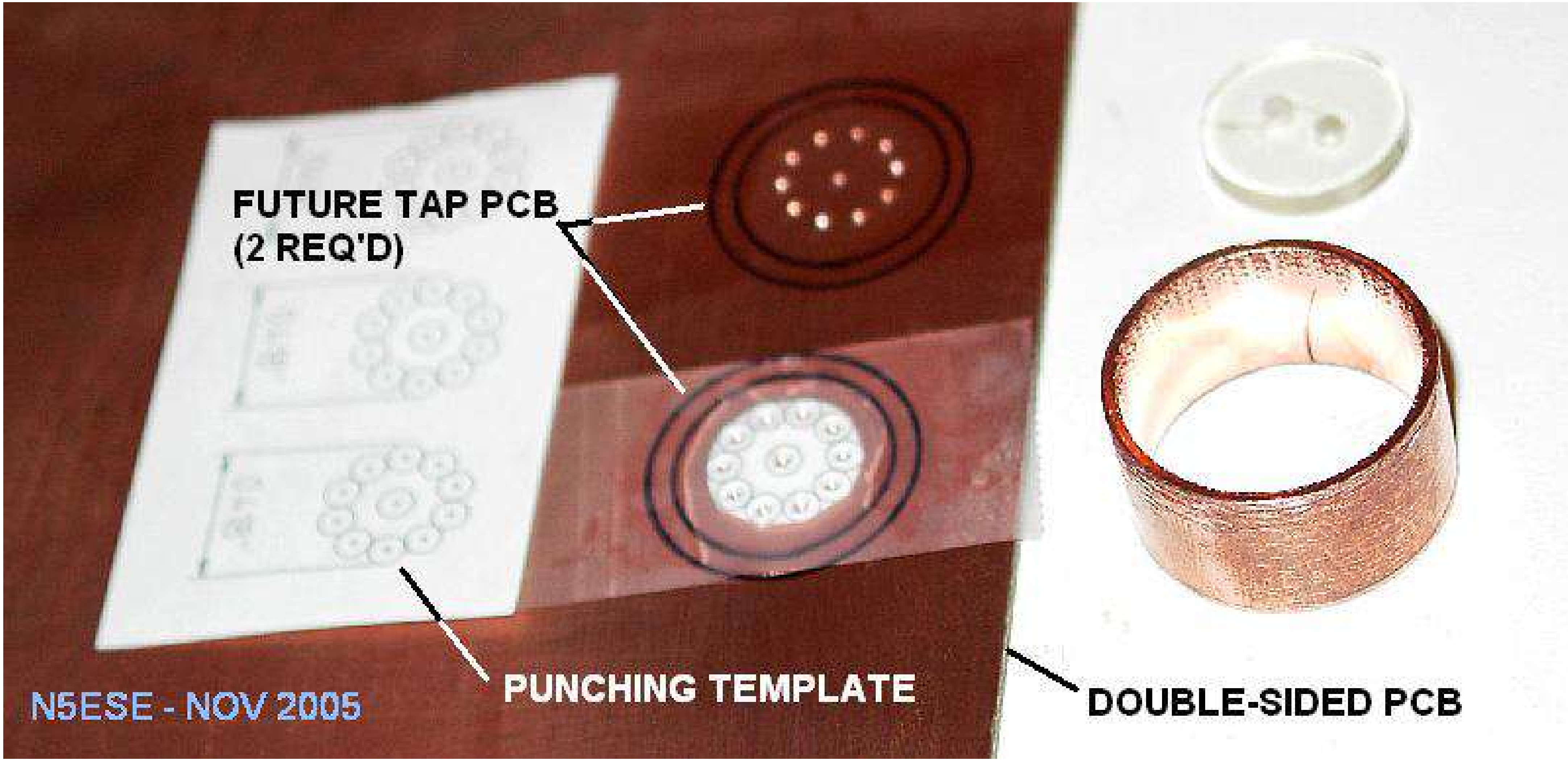


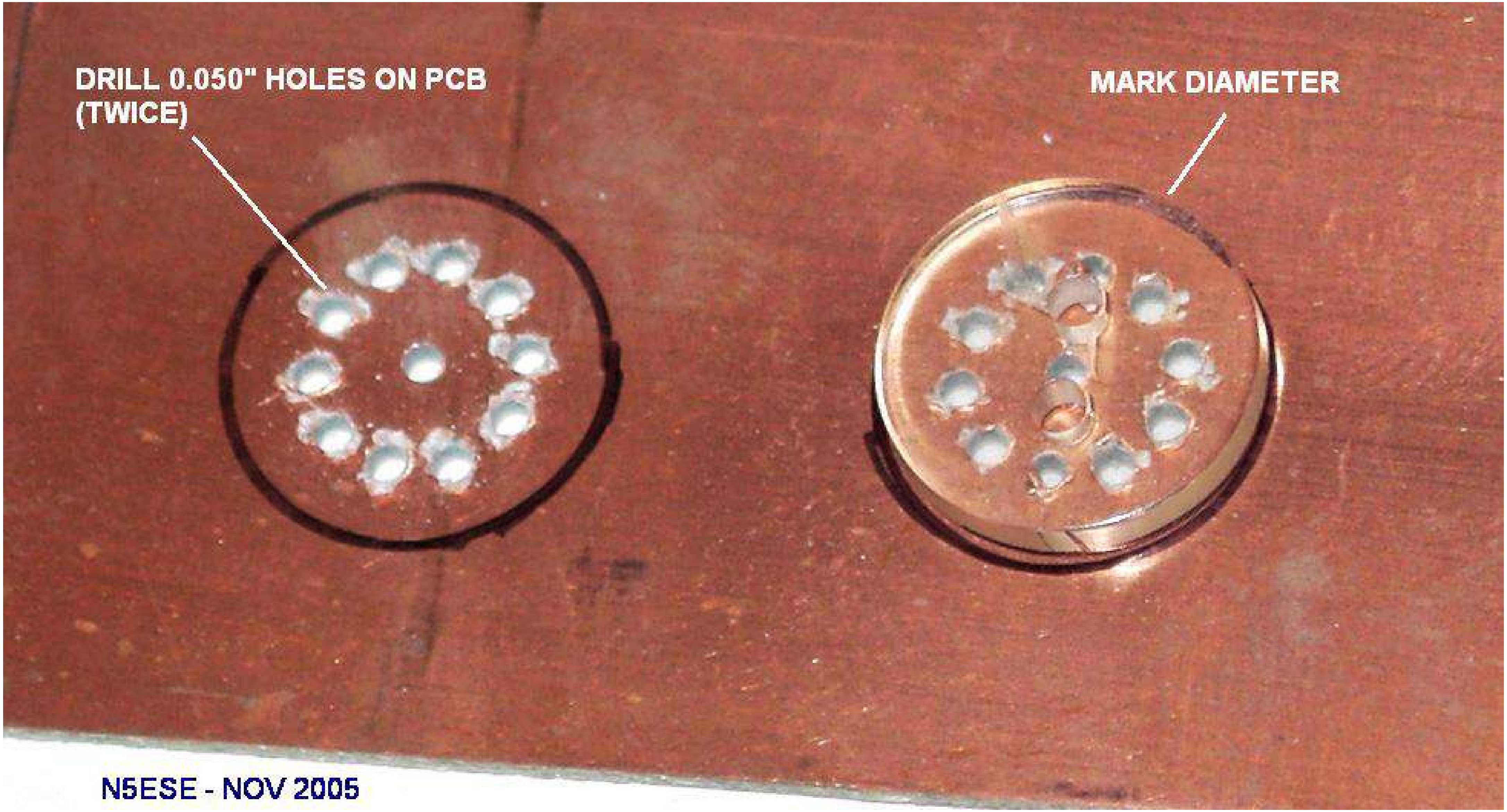
NECO
N5ESE - NOV 2005


50-OHM
DUMMY LOAD
R1
4.99K 1%
2.5W
SEE NOTE
8-120 pF
TRIM
80
pF
POWER METER
RF PWR
INPUT
TRANSMITTER:
300 W MAX
40 dB TAP ATTENUATOR
NOTE: R1 COMPOSED
OF TEN PARALLEL
49.9K 1% 1/4W RESISTORS
N5ESE - NOV 2005

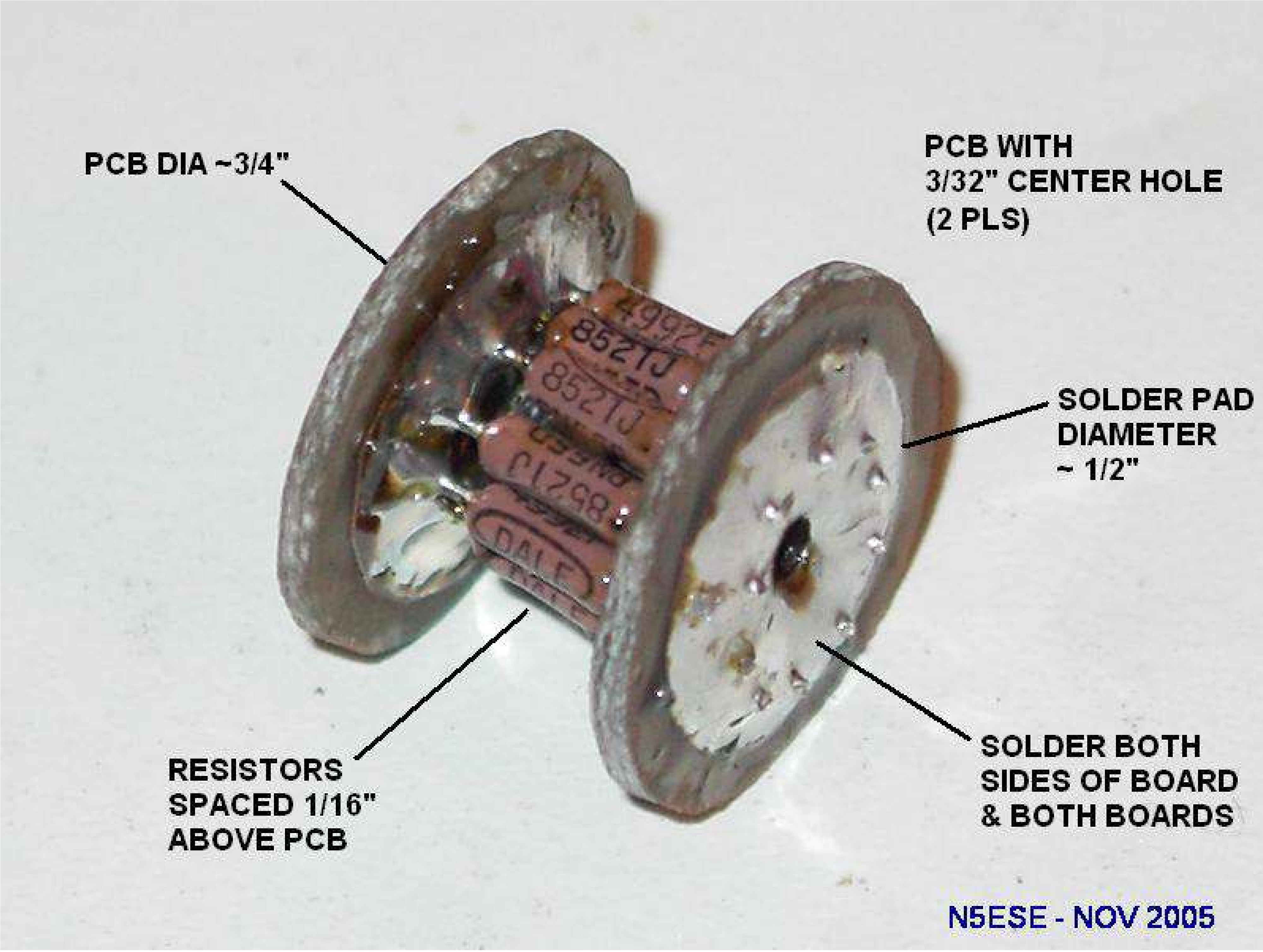

3/4" END CAP
PIPE-CUTTING
TOOL
KEEP
DISCARD
SHIELD
(3/4" PIPE
COUPLING)
LENGTH=
1-5/8" (TYP)
END CAP
N5ESE - NOV 2005

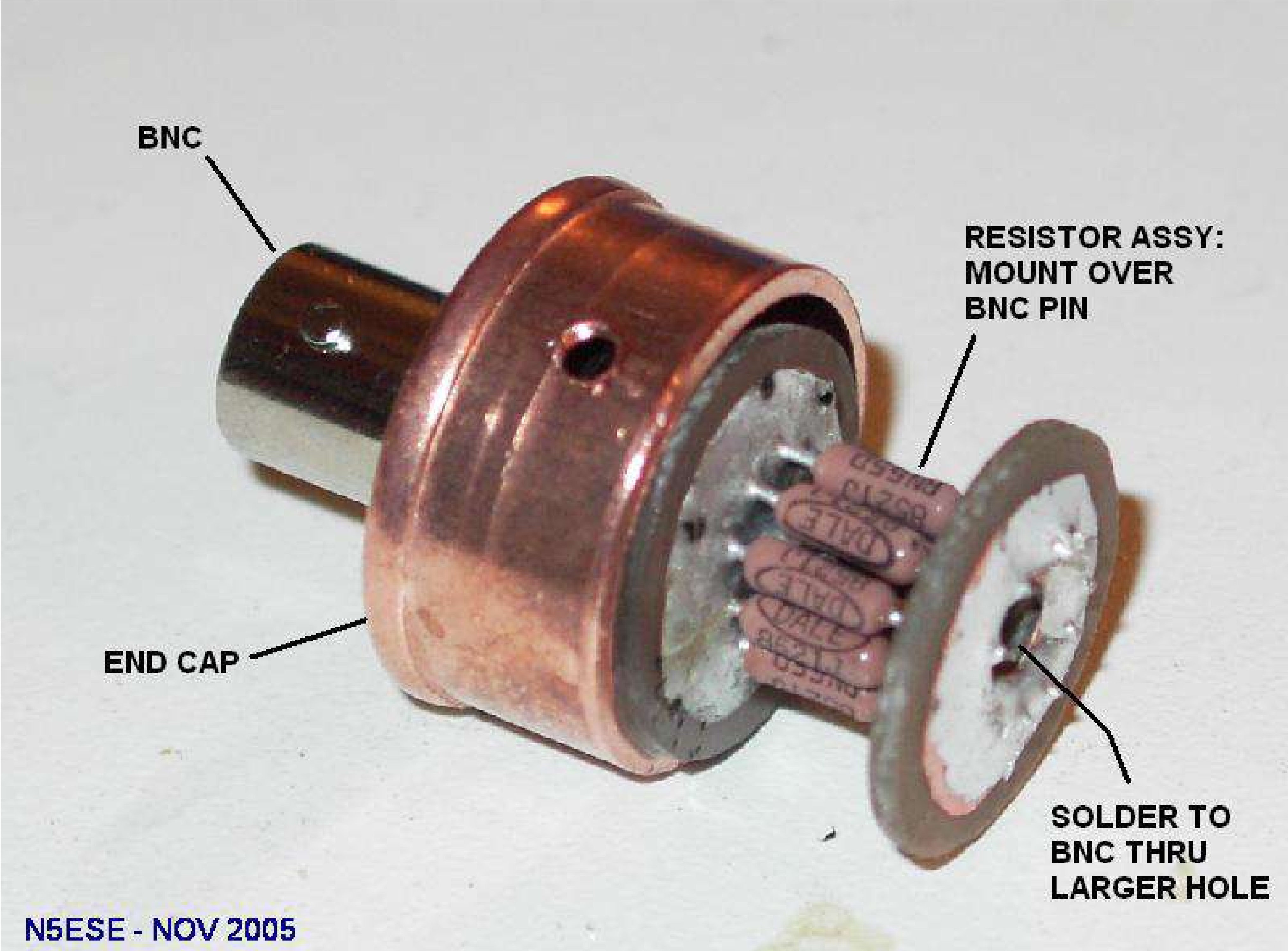

MOUNT
BNC
DRILL TO
CLEAR
4-40 SCREW
MOUNT
BNC IN
END CAP
TAP 4-40
N5ESE - NOV 2005

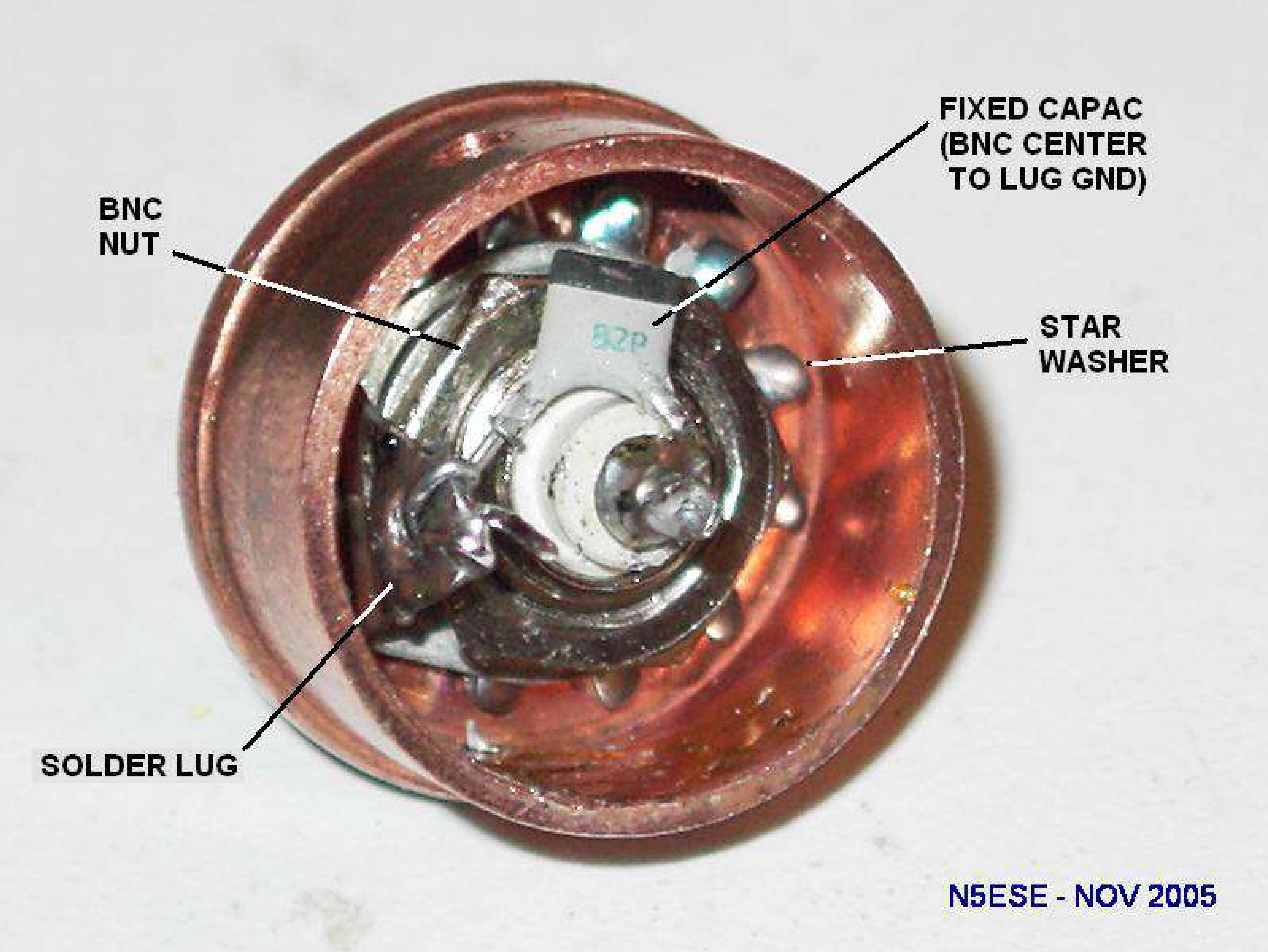

FUTURE TAP PCB
(2 REQ'D)
PUNCHING TEMPLATE
DOUBLE-SIDED PCB
N5ESE - NOV 2005

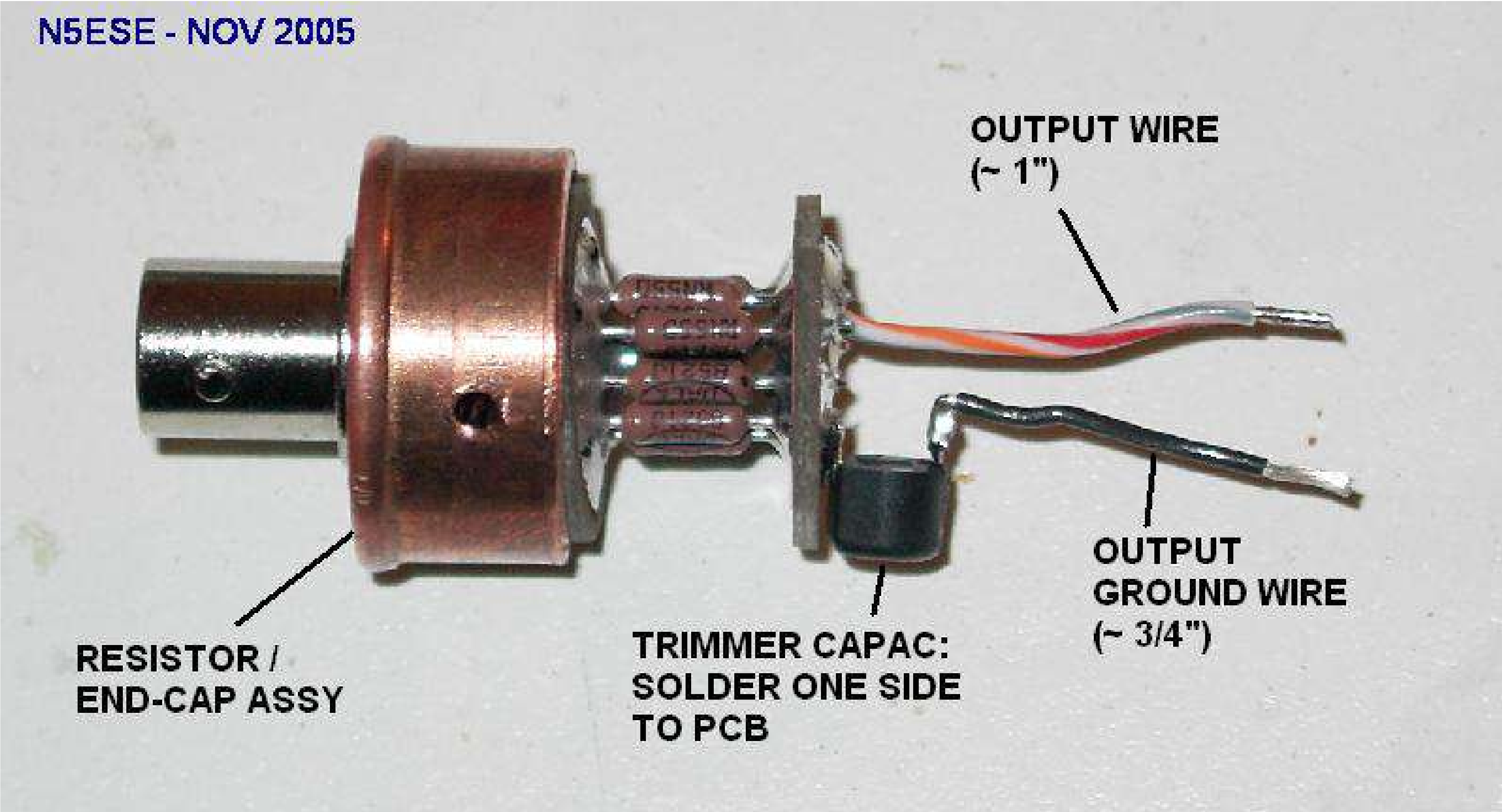

DRILL 0.050" HOLES ON PCB
(TWICE)
MARK DIAMETER
N5ESE - NOV 2005


#186
Flux-Pen
ROSIN FLUX, TYPE RMA
CODE SYMBOL 75297, QPL #14256-528-90
Do not take internally.
KEEP OUT OF REACH OF
CHILDREN. BEFORE USING
CUT, CLEAN,
AND FLUX
PCB (BOTH SIDES)
REMOVE COPPER
AROUND EDGE
(BOTH SIDES)
N5ESE - NOV 2005

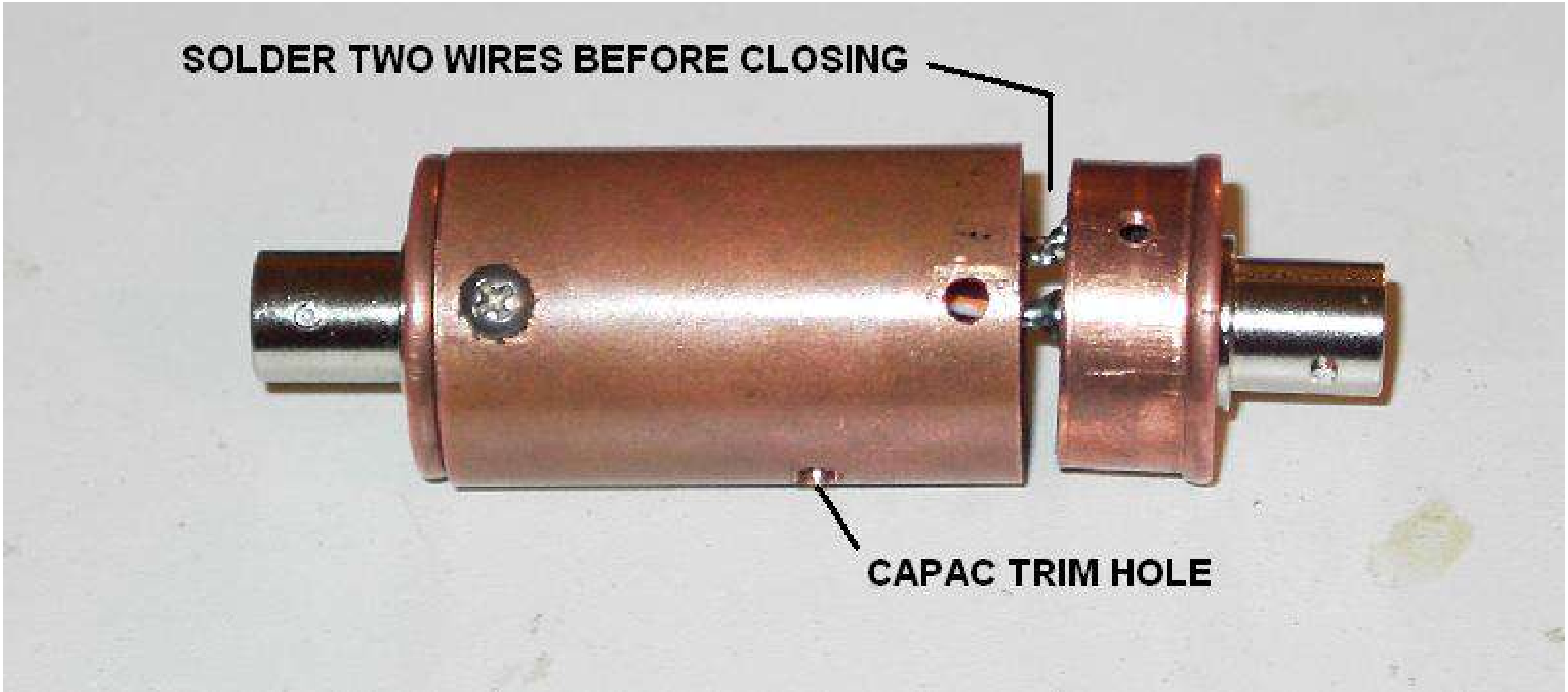

PCB DIA ~3/4"
PCB WITH
3/32" CENTER HOLE
(2 PLS)
SOLDER PAD
DIAMETER
~ 1/2"
RESISTORS
SPACED 1/16"
ABOVE PCB
SOLDER BOTH
SIDES OF BOARD
& BOTH BOARDS
N5ESE - NOV 2005


BNC
RESISTOR ASSY: MOUNT OVER BNC PIN
END CAP
SOLDER TO BNC THRU LARGER HOLE
N5ESE - NOV 2005

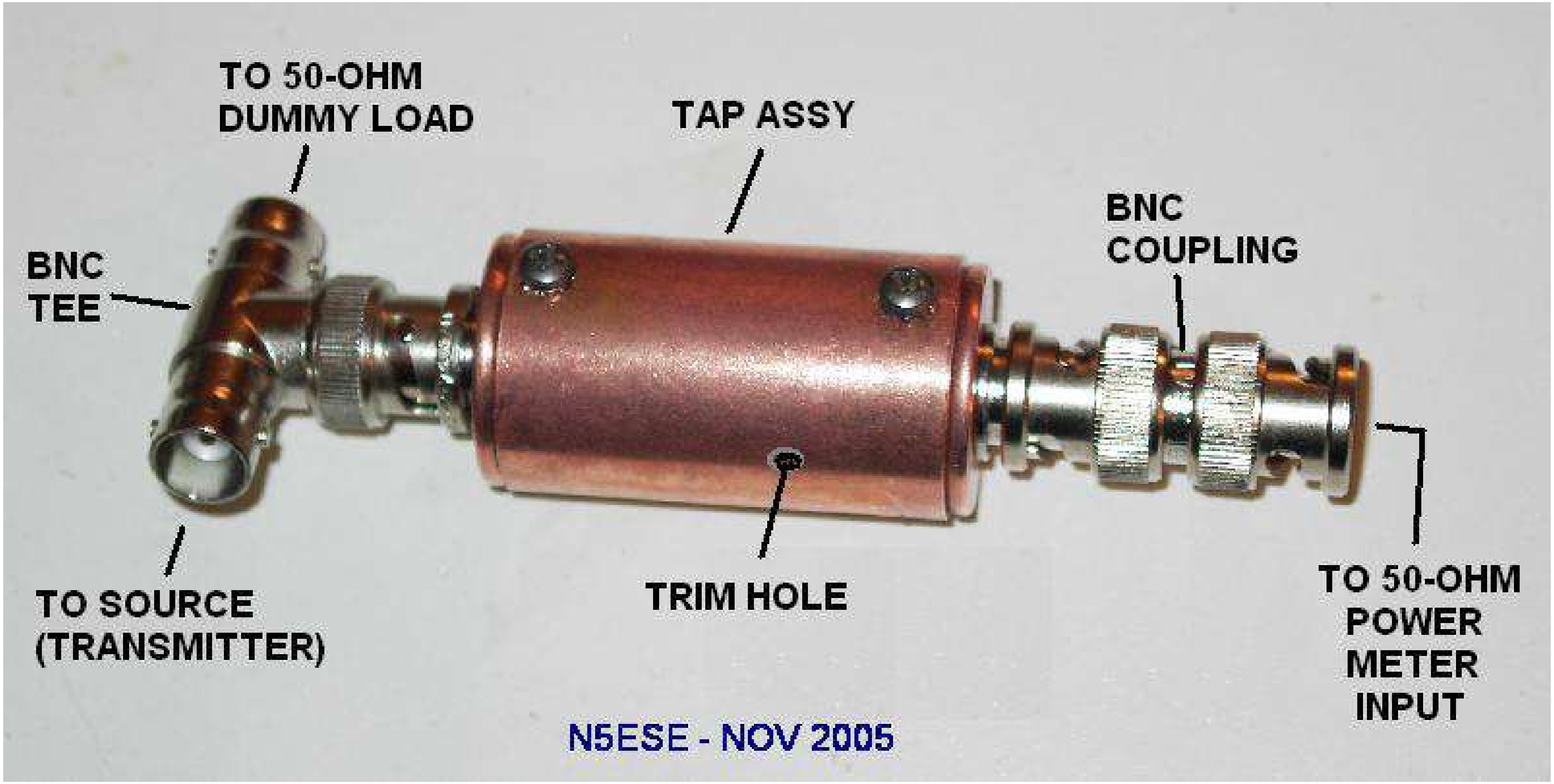

FIXED CAPAC
(BNC CENTER
TO LUG GND)
BNC
NUT
82P
STAR
WASHER
SOLDER LUG
N5ESE - NOV 2005

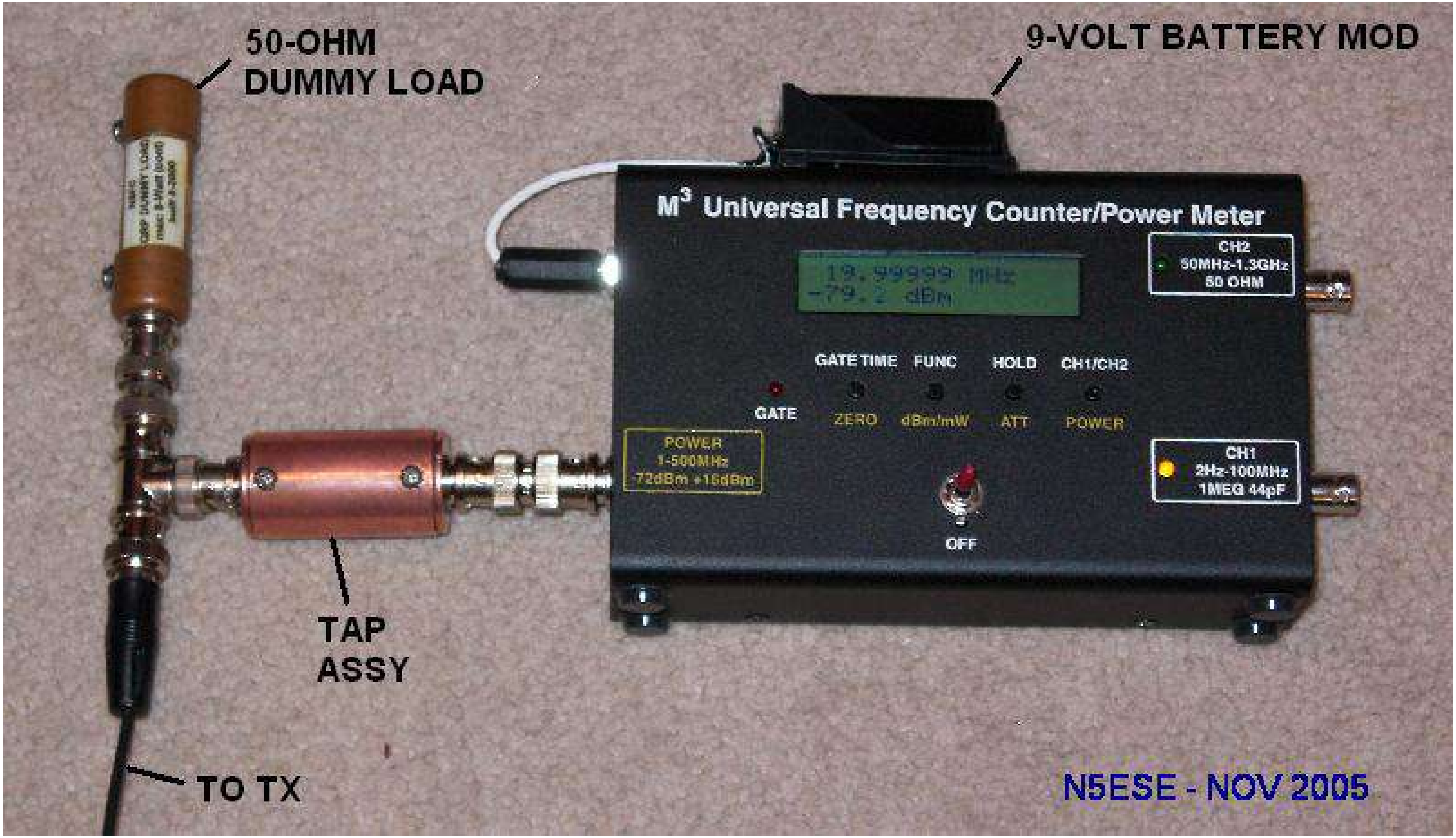

N5ESE - NOV 2005
OUTPUT WIRE
(~ 1")
OUTPUT
GROUND WIRE
(~ 3/4")
TRIMMER CAPAC:
SOLDER ONE SIDE
TO PCB
RESISTOR /
END-CAP ASSY


N5ESE - NOV 2005
1/8" DRILL FOR
TRIMMER CAPAC
ACCESS

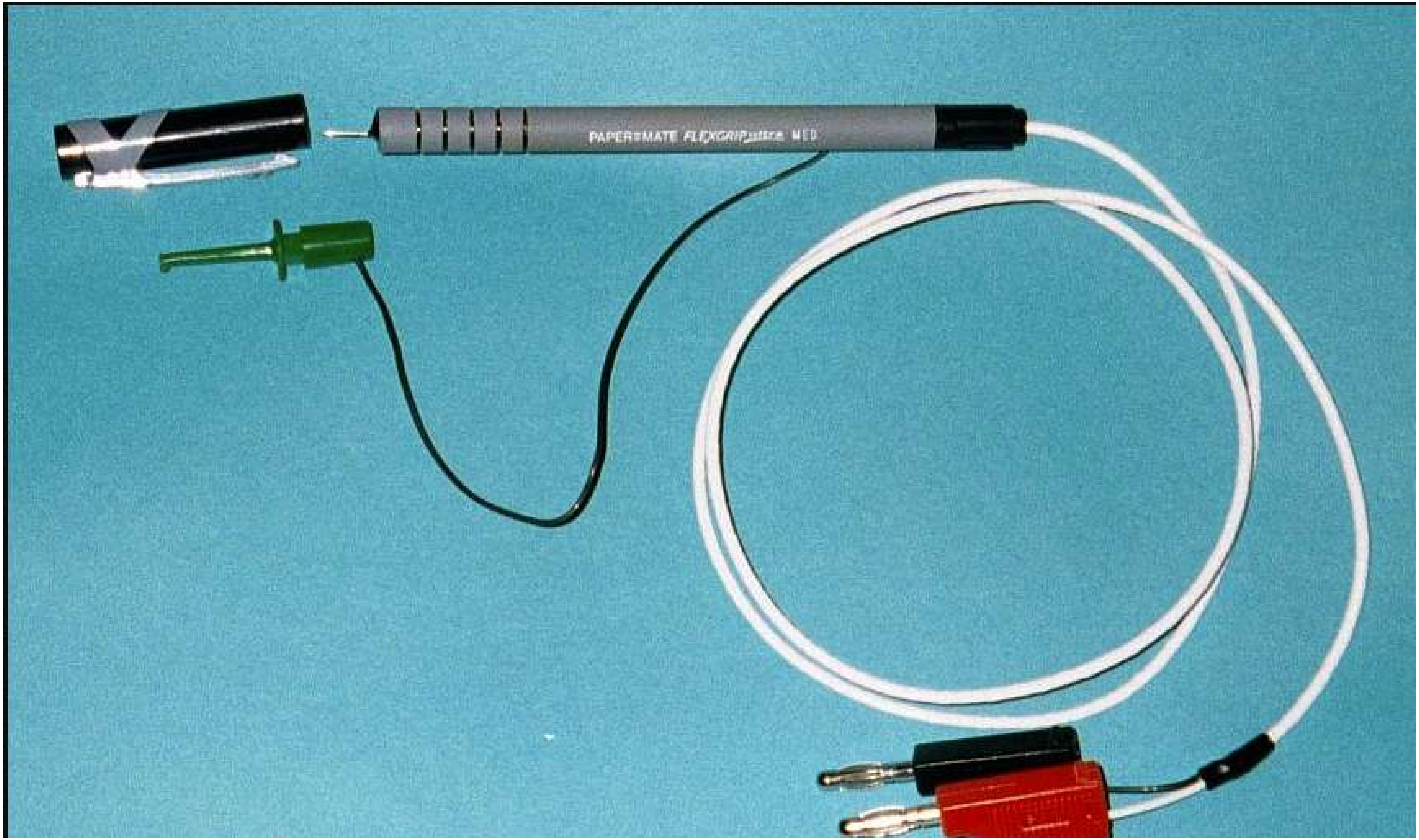

SOLDER TWO WIRES BEFORE CLOSING
CAPAC TRIM HOLE


4-40 SCREWS
HI-POWER
SIDE
(TO TX AND
50-OHM LOAD)
LOW-POWER
SIDE (TO
50-OHM INPUT)
NIBCO
TRIM
N5ESE - NOV 2005

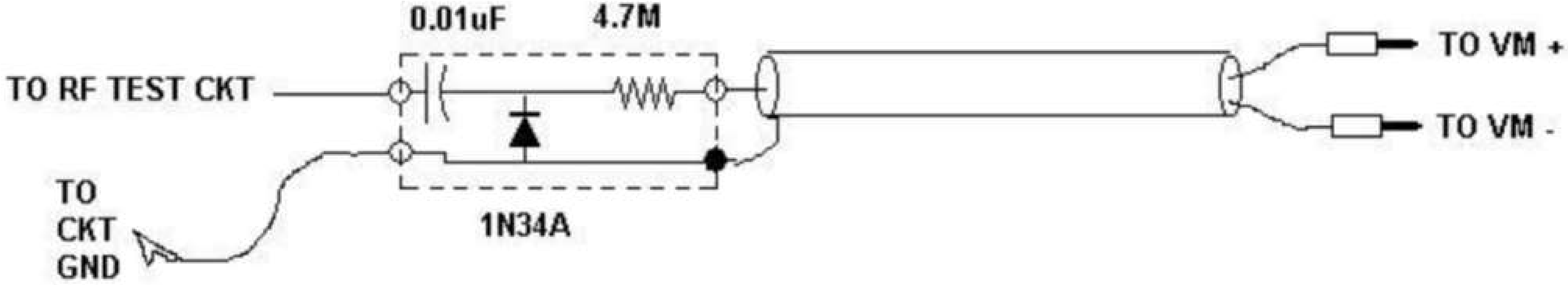

TO 50-OHM
DUMMY LOAD
TAP ASSY
BNC
TEE
BNC
COUPLING
TO SOURCE
(TRANSMITTER)
TRIM HOLE
TO 50-OHM
POWER
METER
INPUT
N5ESE - NOV 2005


50-OHM
DUMMY LOAD
9-VOLT BATTERY MOD
M3 Universal Frequency Counter/Power Meter
CH2
50MHz-1.3GHz
50 OHM
GATE TIME
FUNC
HOLD
CH1/CH2
GATE
ZERO
dBm/mW
ATT
POWER
POWER
CH1
2Hz-100MHz
1MEG 44pF
OFF
TAP
ASSY
TO TX
N5ESE - NOV 2005


M3 Universal Frequency Counter/Power Meter
7.040000 MHz
5.01 W ATT
CH2
50MHz-1.3GHz
50 OHM
GATE TIME
FUNC
HOLD
CH1/CH2
GATE
ZERO
dBm/mW
ATT
POWER
POWER
1-500MHz
-72dBm +16dBm
CH1
2Hz-100MHz
1MEG 44pF
OFF
ELECRAFT K2 TRANSCEIVER
BAND+
DISPLAY
RCL
RF/ALC
BAND-
ANT 1/2
STORE
TUNE
MENU
NB
EDIT
LEVEL
MODE
A/B
A=B
VOX
REV
SPLIT
PRE/ATT
AGC
XFIL
SPOT
CW RV
AFIL
RIT
XIT
MSG
PF1
PF2
REC
KEYER
POWER
AF GAIN
RF GAIN
RATE
LOCK
ON
OFF

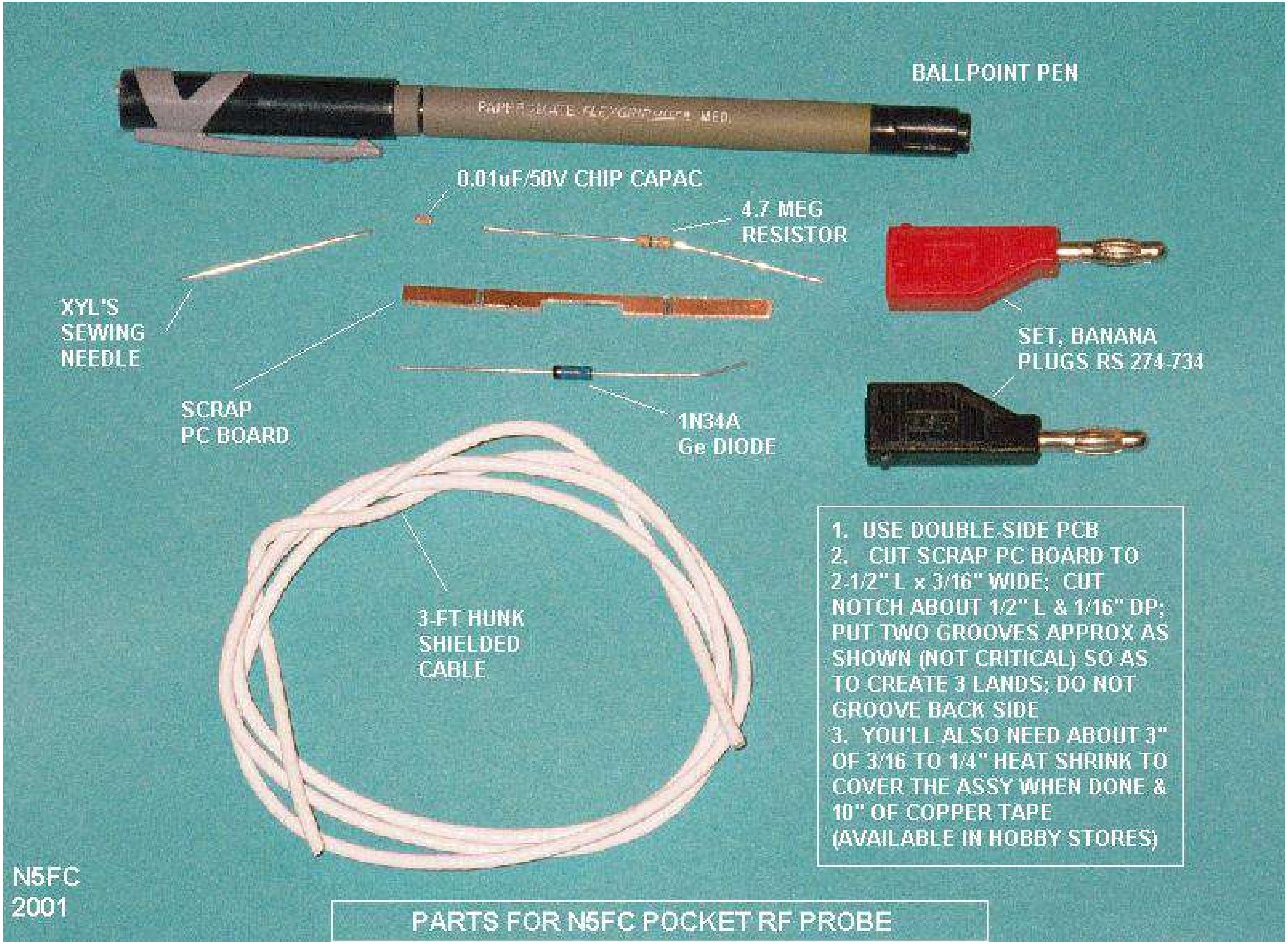

PAPER MATE FLEXGRIP MED

N5FC 2001

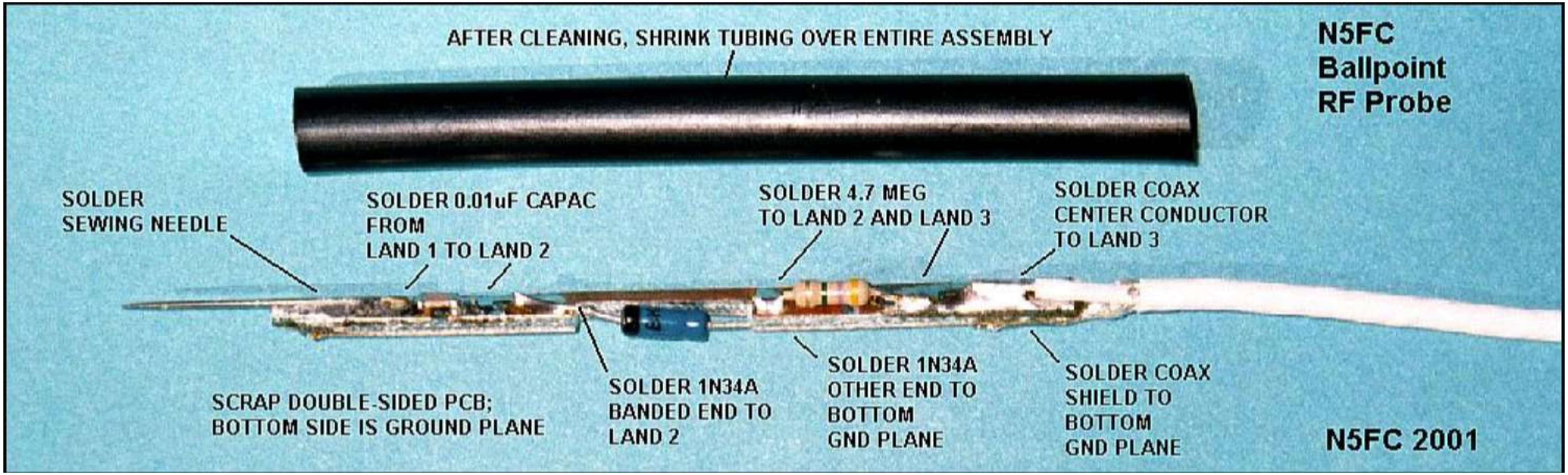


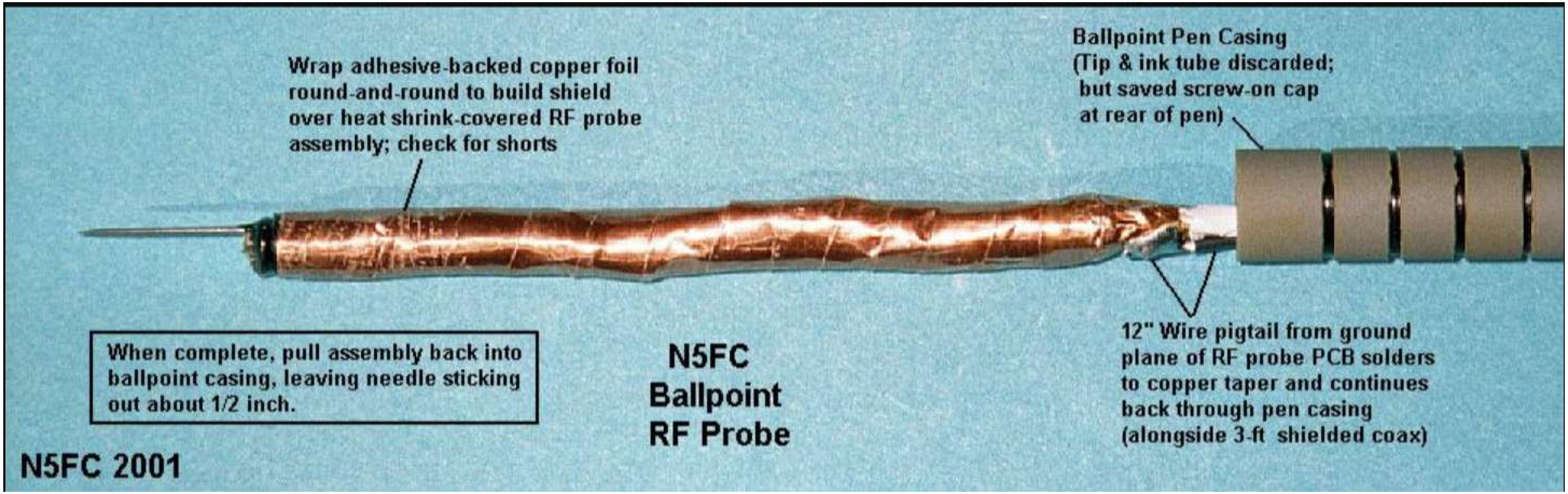
CLASSIC RF PROBE

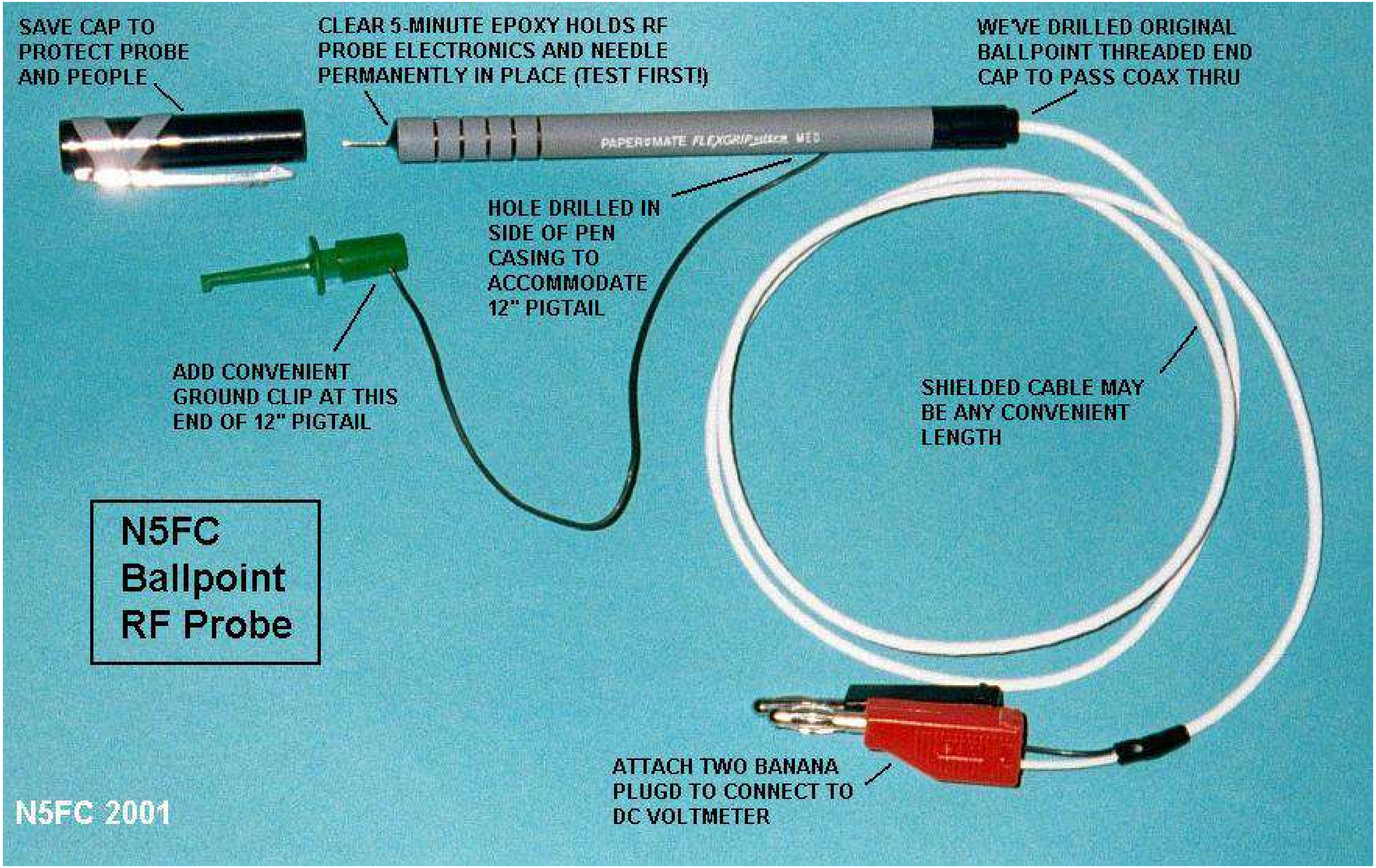
**Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10 -11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)**



PARTS FOR N5FC POCKET RF PROBE

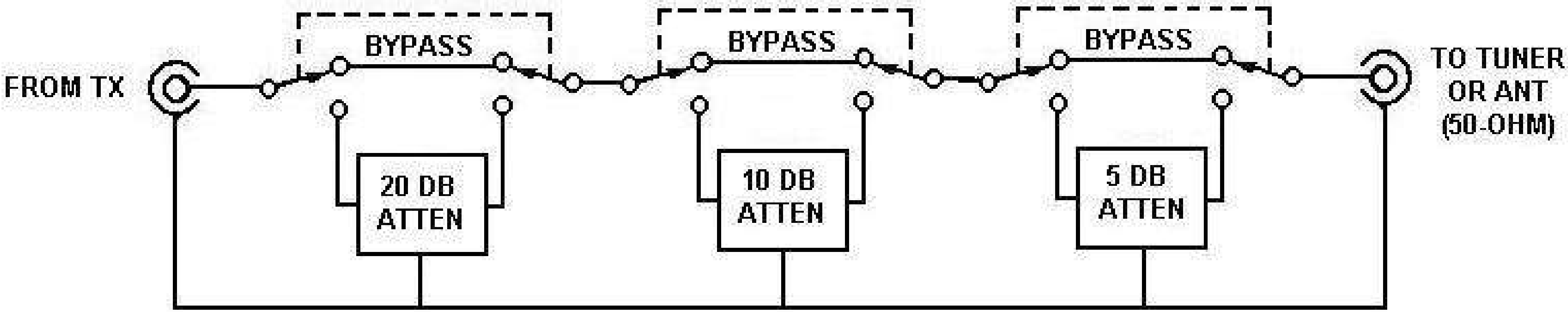

AFTER CLEANING, SHRINK TUBING OVER ENTIRE ASSEMBLY
N5FC
Ballpoint
RF Probe
SOLDER
SEWING NEEDLE
SOLDER 0.01uF CAPAC
FROM
LAND 1 TO LAND 2
SOLDER 4.7 MEG
TO LAND 2 AND LAND 3
SOLDER COAX
CENTER CONDUCTOR
TO LAND 3
SCRAP DOUBLE-SIDED PCB;
BOTTOM SIDE IS GROUND PLANE
SOLDER 1N34A
BANDED END TO
LAND 2
SOLDER 1N34A
OTHER END TO
BOTTOM
GND PLANE
SOLDER COAX
SHIELD TO
BOTTOM
GND PLANE
N5FC 2001


Wrap adhesive-backed copper foil round-and-round to build shield over heat shrink-covered RF probe assembly; check for shorts
Ballpoint Pen Casing (Tip & ink tube discarded; but saved screw-on cap at rear of pen)
When complete, pull assembly back into ballpoint casing, leaving needle sticking out about 1/2 inch.
N5FC Ballpoint RF Probe
12" Wire pigtail from ground plane of RF probe PCB solders to copper taper and continues back through pen casing (alongside 3-ft shielded coax)
N5FC 2001

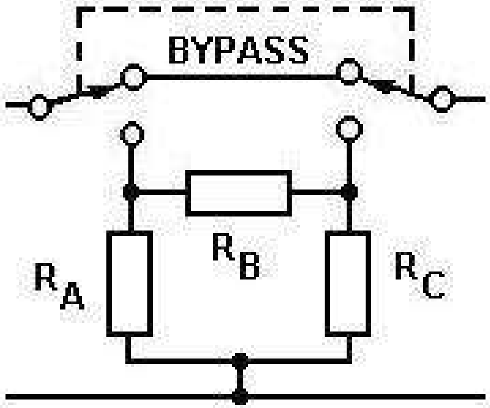

SAVE CAP TO PROTECT PROBE AND PEOPLE
CLEAR 5-MINUTE EPOXY HOLDS RF PROBE ELECTRONICS AND NEEDLE PERMANENTLY IN PLACE (TEST FIRST!)
WE'VE DRILLED ORIGINAL BALLPOINT THREADED END CAP TO PASS COAX THRU
PAPER MATE FLEXGRIP
HOLE DRILLED IN SIDE OF PEN CASING TO ACCOMMODATE 12" PIGTAIL
ADD CONVENIENT GROUND CLIP AT THIS END OF 12" PIGTAIL
SHIELDED CABLE MAY BE ANY CONVENIENT LENGTH
N5FC
Ballpoint
RF Probe
ATTACH TWO BANANA PLUGD TO CONNECT TO DC VOLTMETER
N5FC 2001


N5FC 2001
DURACELL ULTRA


N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator
ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX



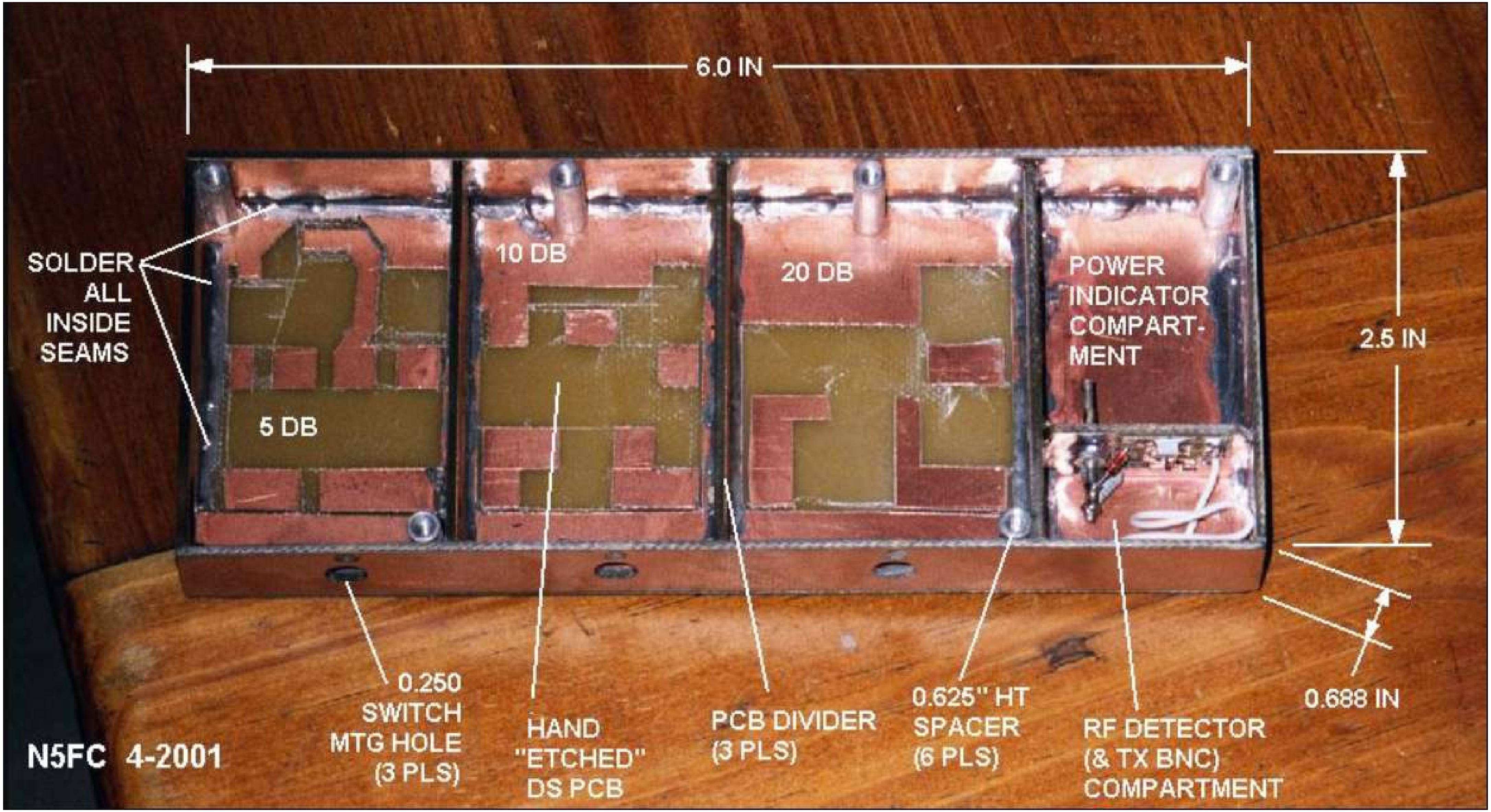
N5FC QRP Switchable 0-5-10-15-20-25-30-35 db Attenuator

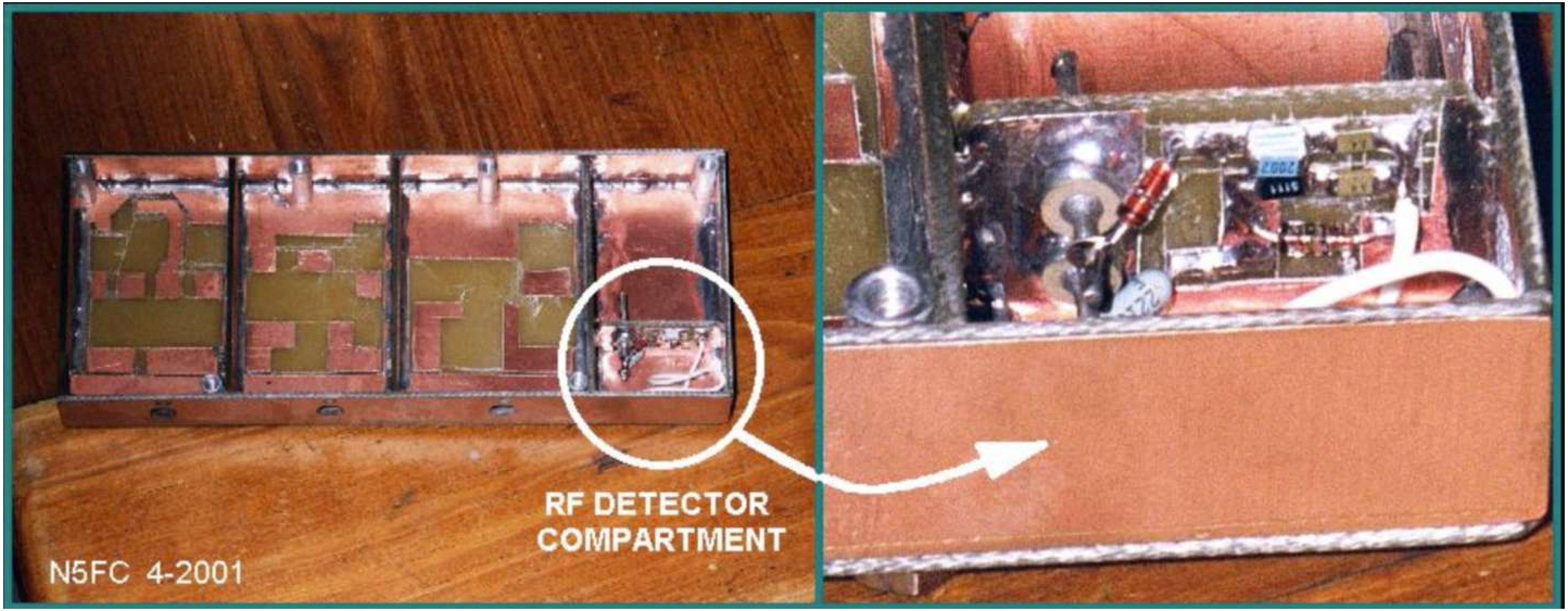


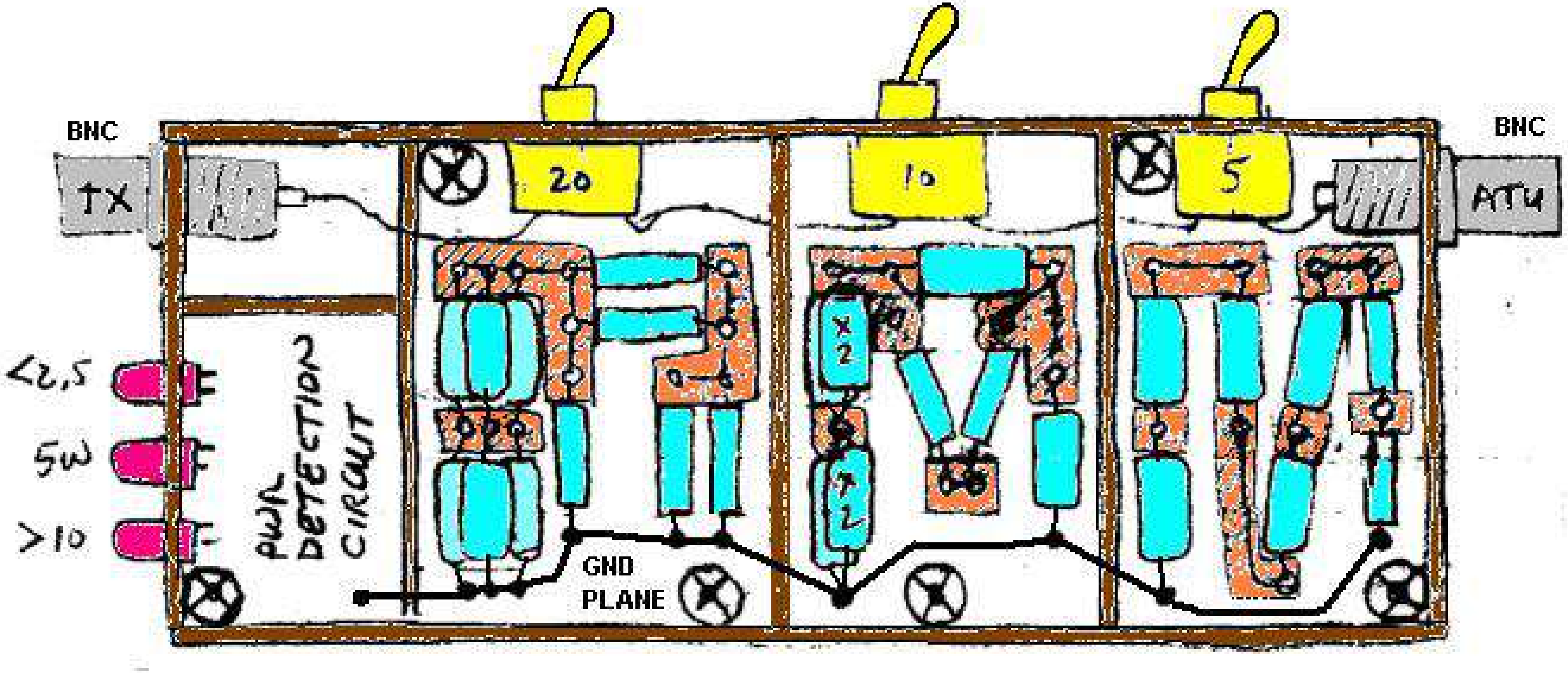
ATTENUATOR SECTION CIRCUIT

		NOM'L	ACT'L	IMPLEMENT WITH
20 db (NOM) ACT=19.7db	R_A	61.1	67	6 ea 100/1W SERIES-PAR'L & 1K PAR'L
	R_B	247.5	235	2 ea 470 / 0.5W IN PARALLEL
	R_C	61.1	62	68/0.5W IN PAR'L with 680/0.5W
10 db (NOM) ACT = 9.7 db	R_A	96.2	100	4 ea 100/1W in SERIES-PARALLEL
	R_B	71.2	67	100/1W IN PAR'L w: 2 ea 100/.5W IN SER
	R_C	96.2	100	100/0.5W
5 db (NOM) ACT = 4.9 db	R_A	247.5	200	2 ea 100/1W IN SERIES
	R_B	30.4	30	3 ea 10/1W IN SERIES
	R_C	247.5	200	2 ea 100/0.5W IN SERIES

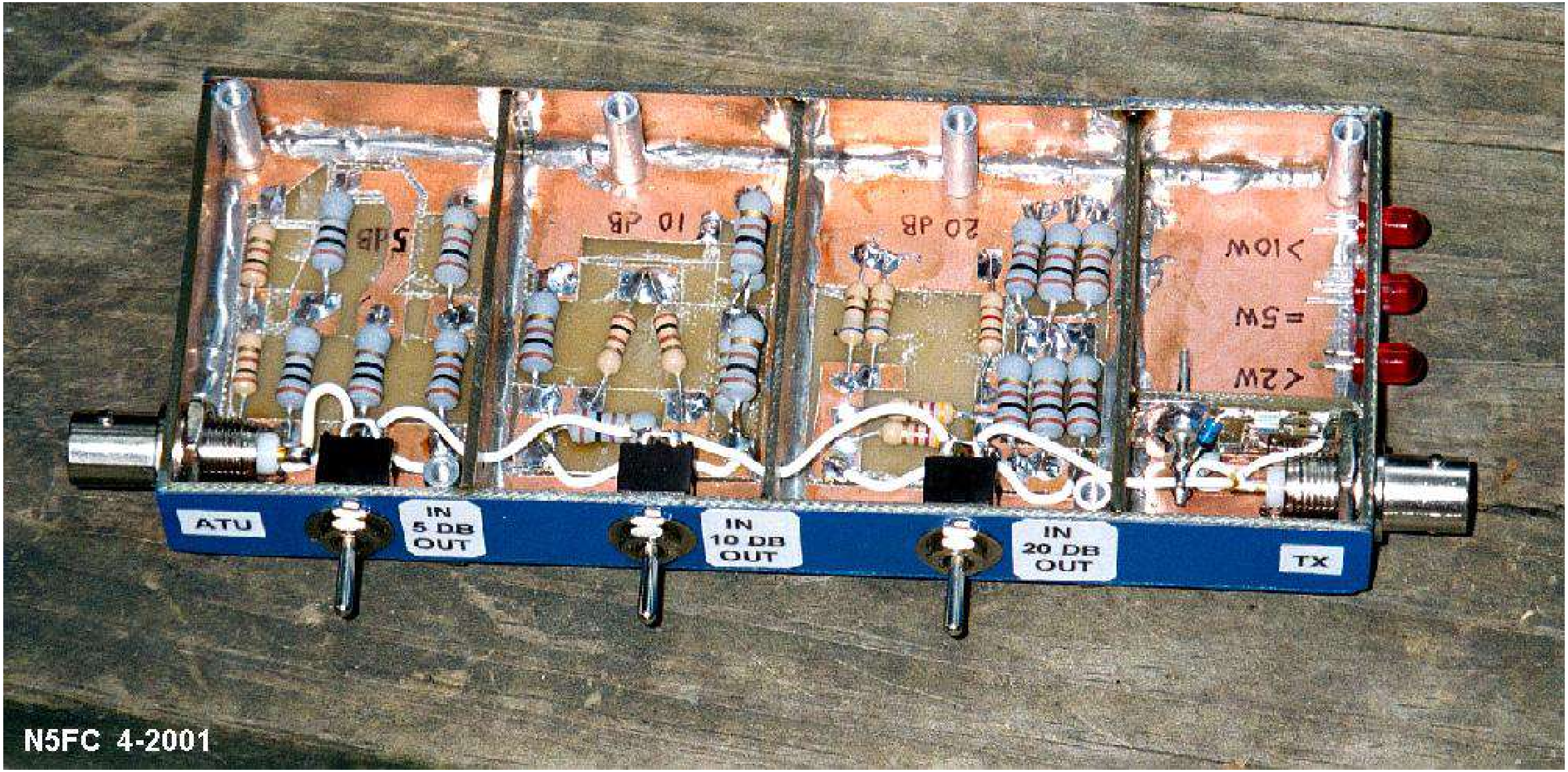
N5FC 4-2001

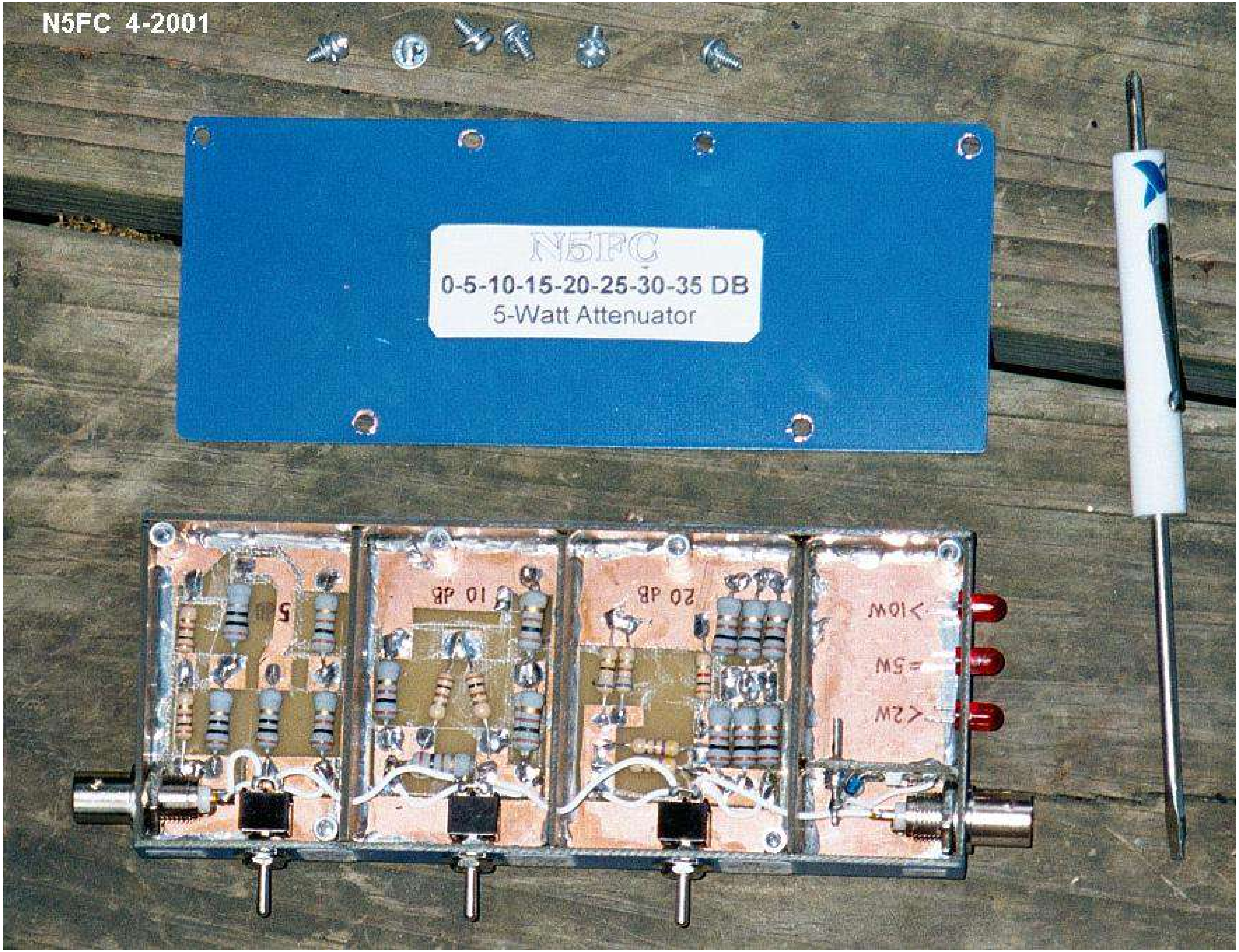

6.0 IN
2.5 IN
0.688 IN
SOLDER ALL INSIDE SEAMS
10 DB
20 DB
5 DB
POWER INDICATOR COMPART-MENT
0.250 SWITCH MTG HOLE (3 PLS)
HAND "ETCHED" DS PCB
PCB DIVIDER (3 PLS)
0.625" HT SPACER (6 PLS)
RF DETECTOR (& TX BNC) COMPARTMENT
N5FC 4-2001

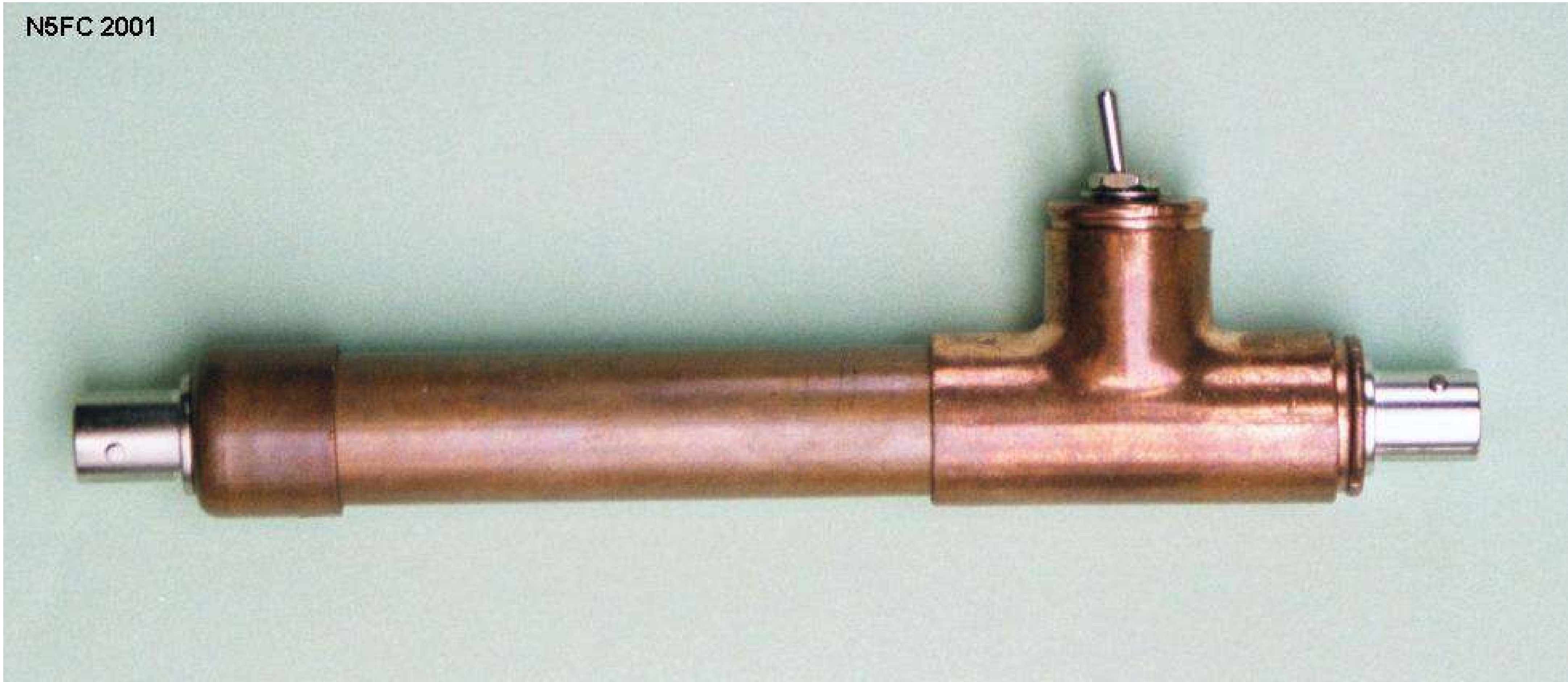

RF DETECTOR
COMPARTMENT
N5FC 4-2001

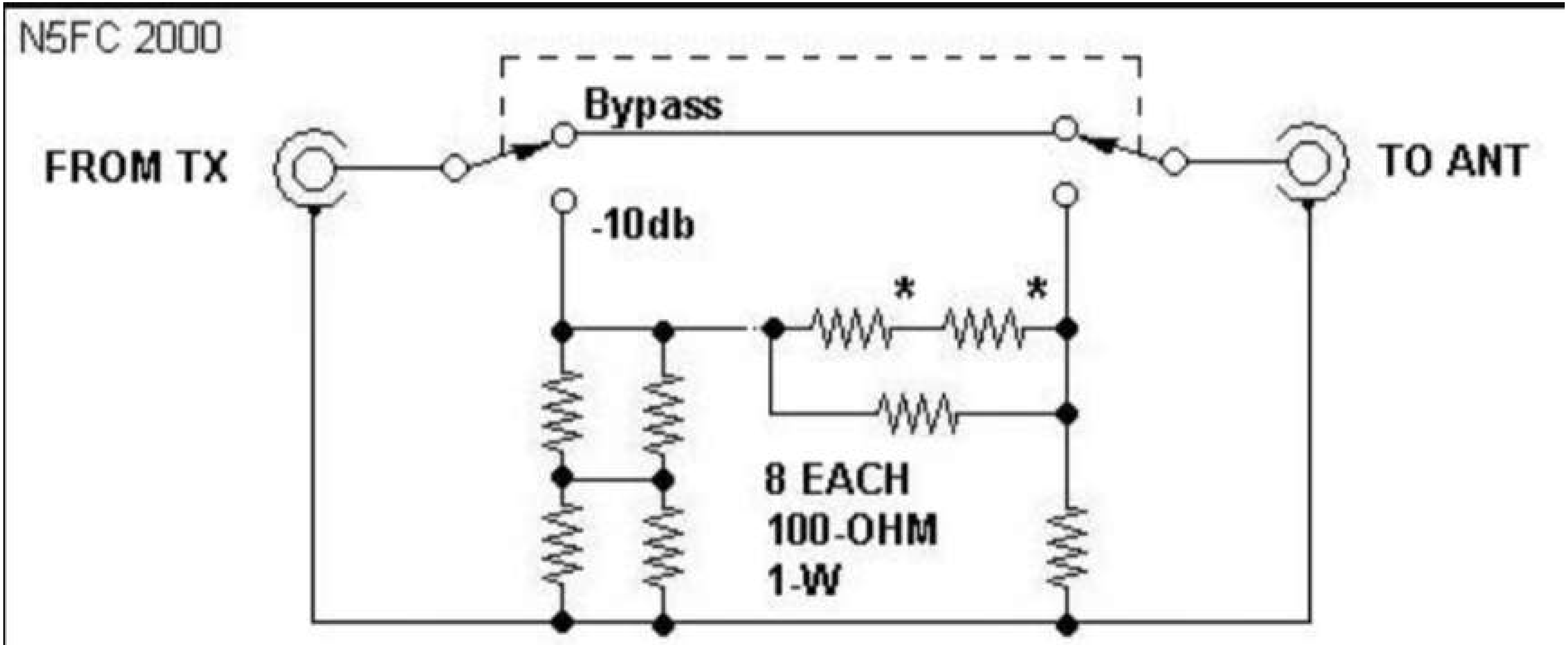

BNC
TX
BNC
ATU
20
10
5
<2,5
5W
>10
PWR DETECTION CIRCUIT
X2
X2
GND PLANE

N5FC 4-2001


ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX
N5FC 4-2001

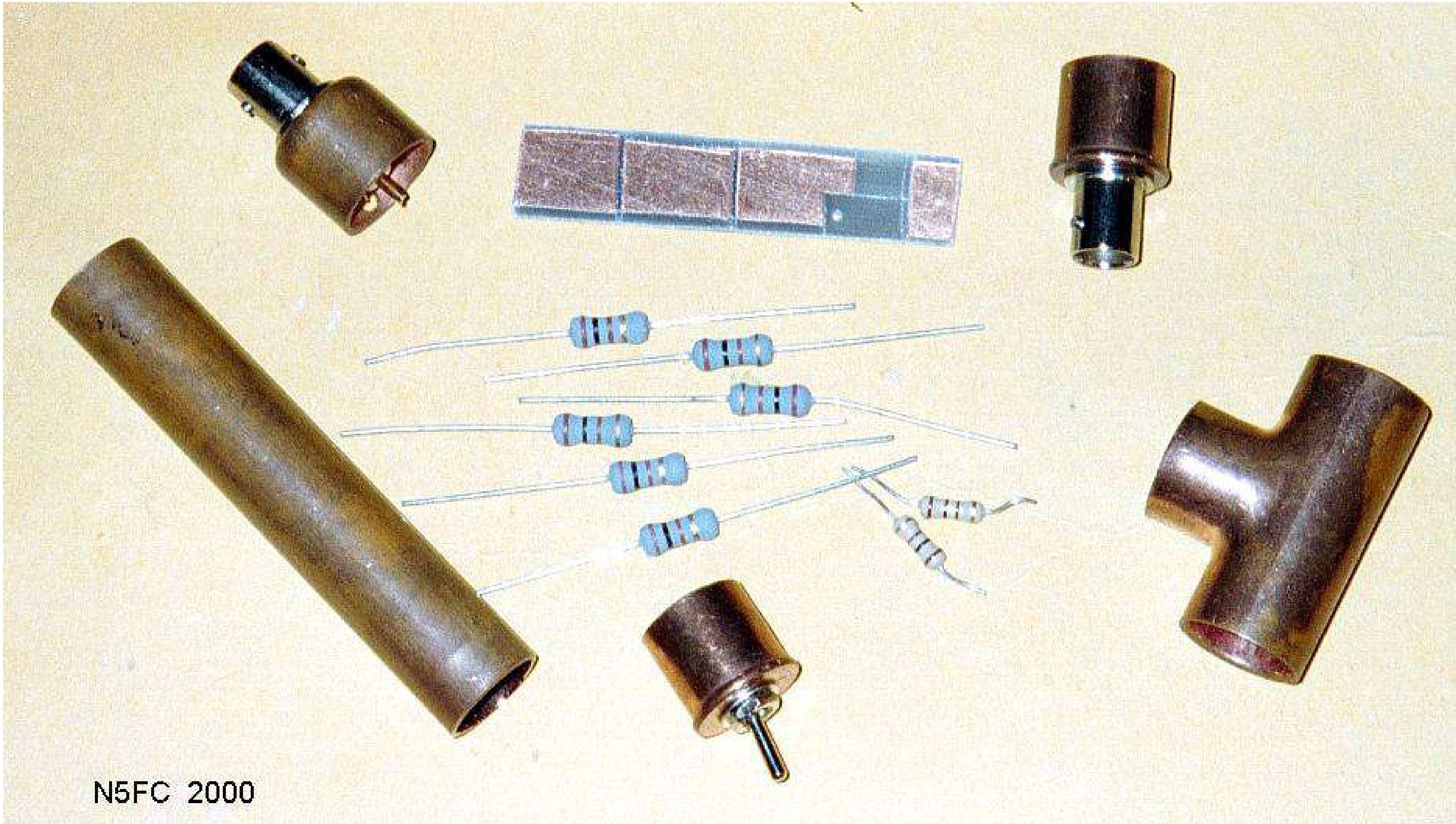

N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator


N5FC 2001

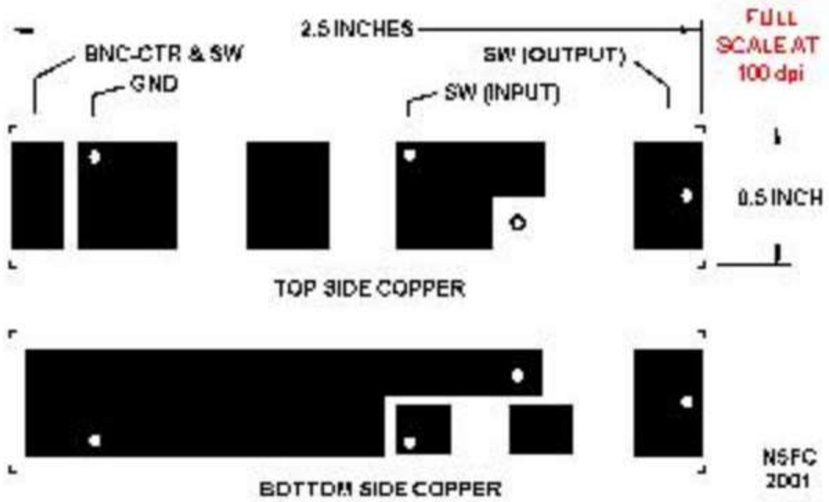


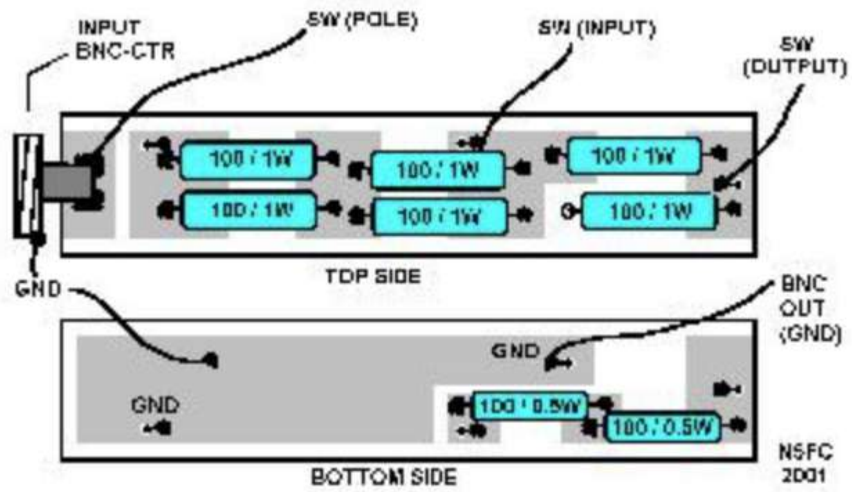
NOTE: 2 RESISTORS MARKED WITH '*' MAY BE RATED 1/2 W

QRP Switchable 10 db Attenuator


N5FC 2000

were then tack-soldered to the pc board. Sorry, but you'll have to use teflon-coated wire for the wiring, because the resistors can get very hot in this application. Here's a sketch of the pc board copper and component layout:

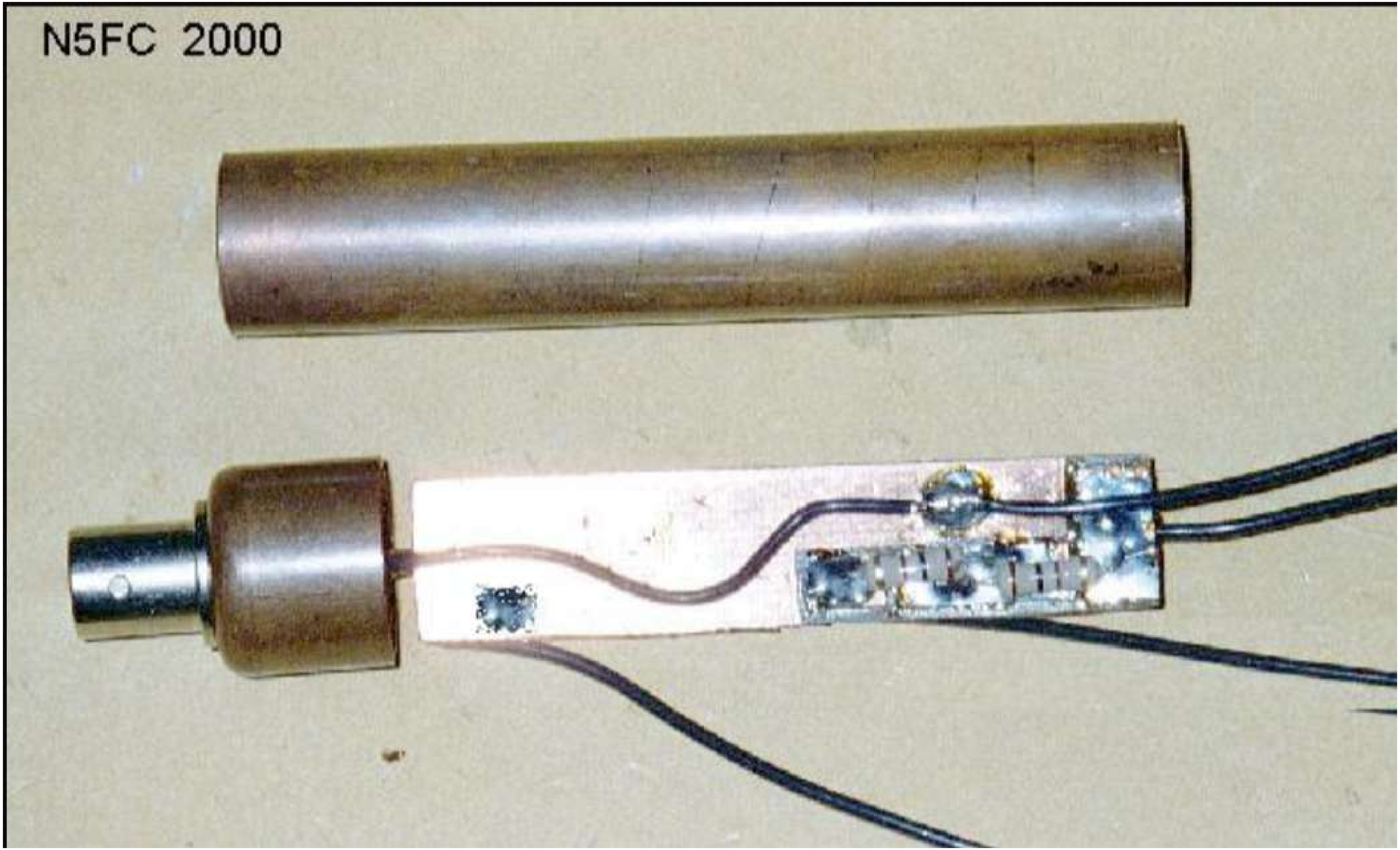


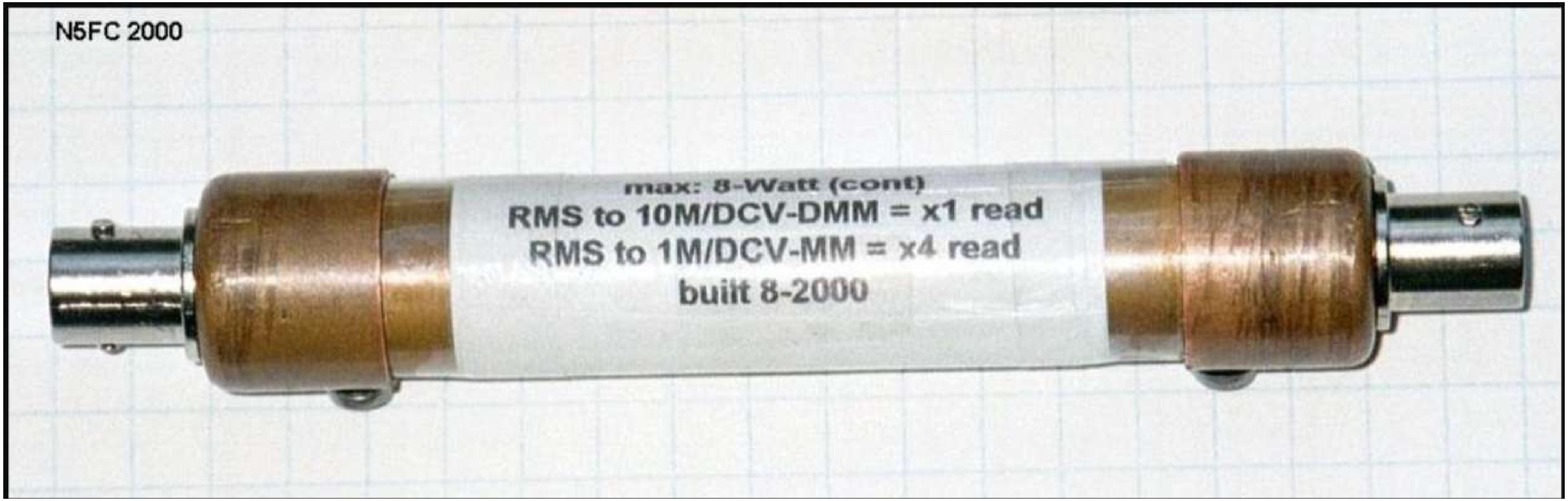


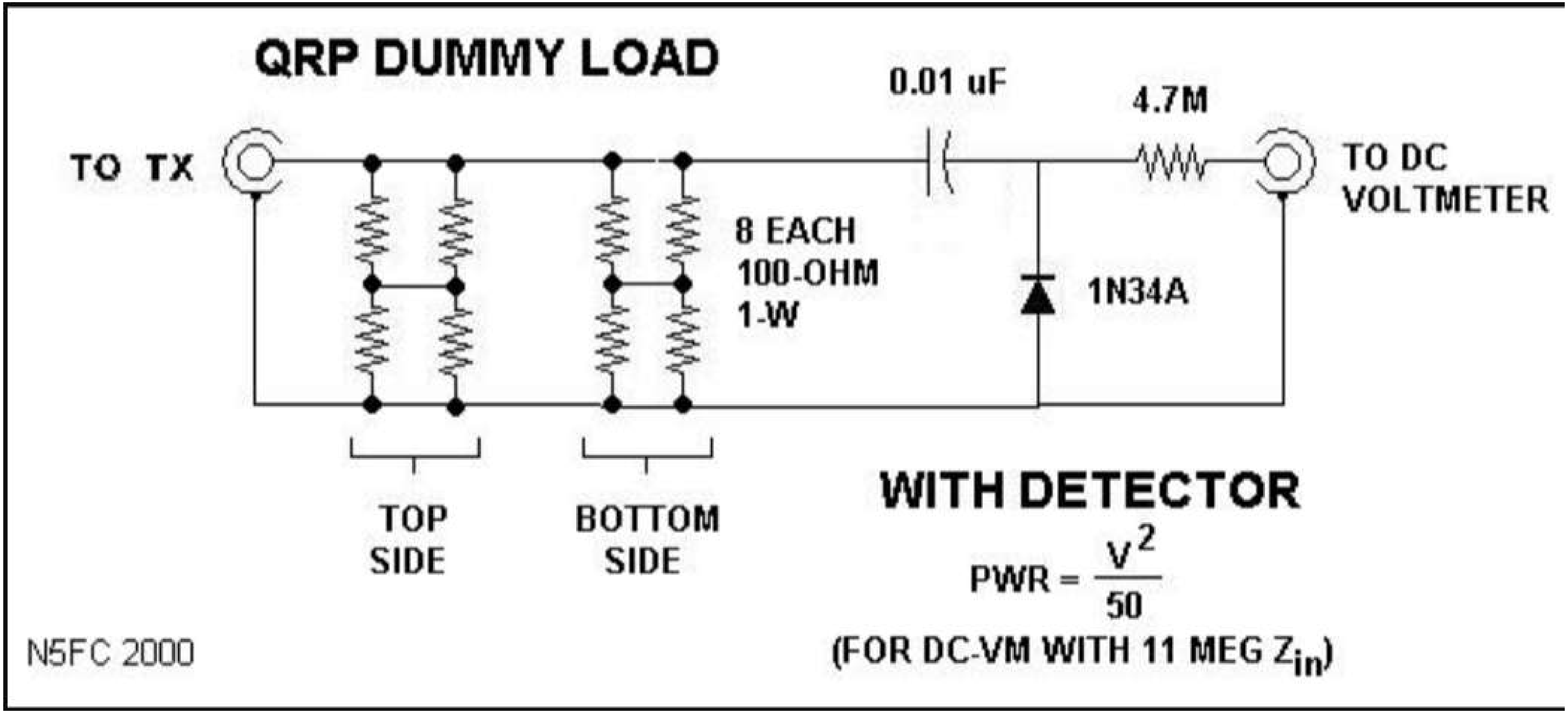
Click on either of the above images to see a larger, more readable image

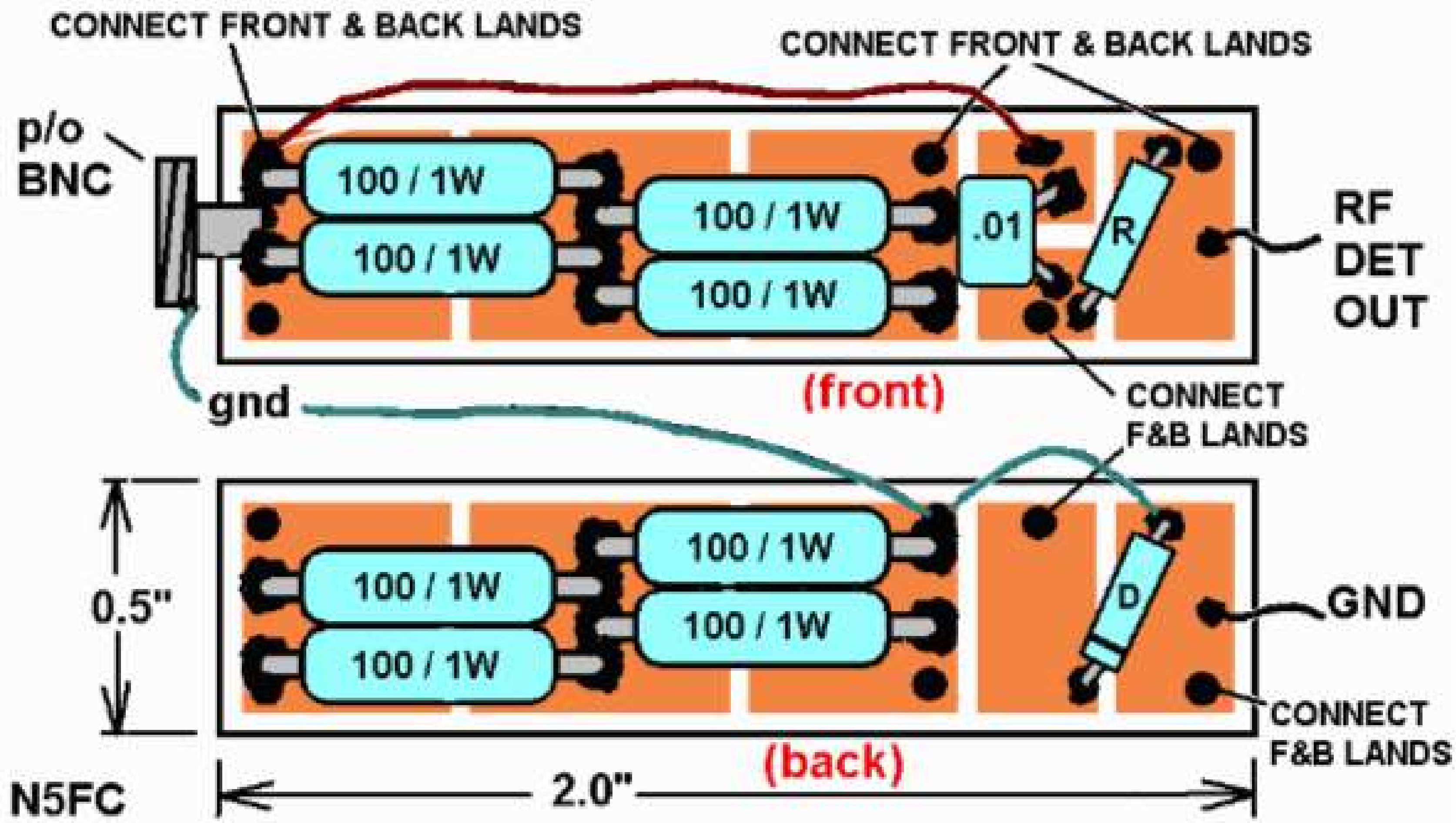
Note that where holes are drilled through the board, a wire provides continuity from top to bottom (solder on both sides)... otherwise, everything is soldered "surface-mount" style, with a big blob of solder holding the components down (don't get carried away). The center pin of the input BNC connector gets soldered directly to the foil where shown.


N5FC 2000


N5FC 2000

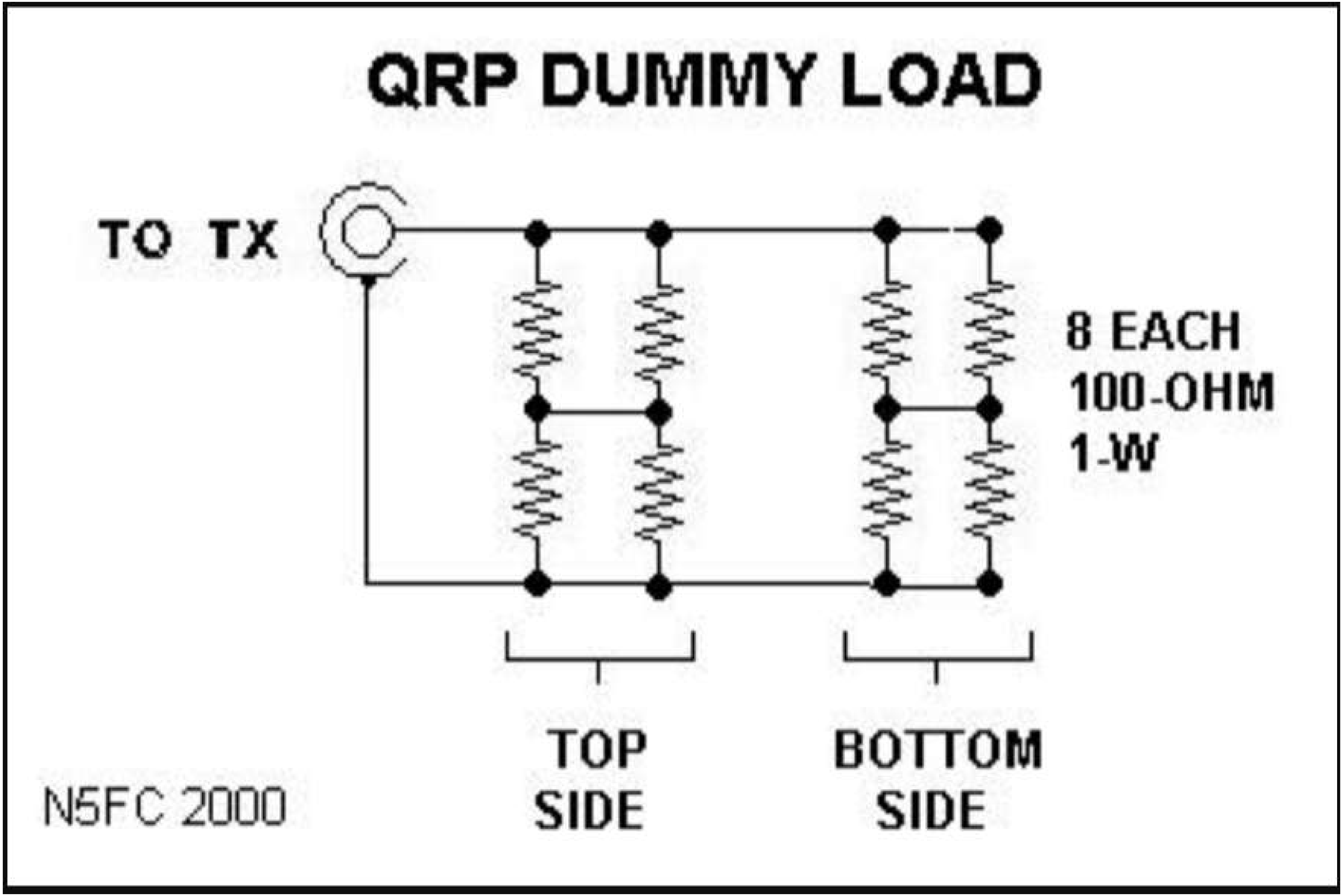

N5FC 2000
max: 8-Watt (cont)
RMS to 10M/DCV-DMM = x1 read
RMS to 1M/DCV-MM = x4 read
built 8-2000


QRP DUMMY LOAD
TO TX
0.01 uF
4.7M
TO DC
VOLTMETER
8 EACH
100-OHM
1-W
1N34A
TOP
SIDE
BOTTOM
SIDE
WITH DETECTOR
PWR = V2 / 50
(FOR DC-VM WITH 11 MEG Zin)
N5FC 2000

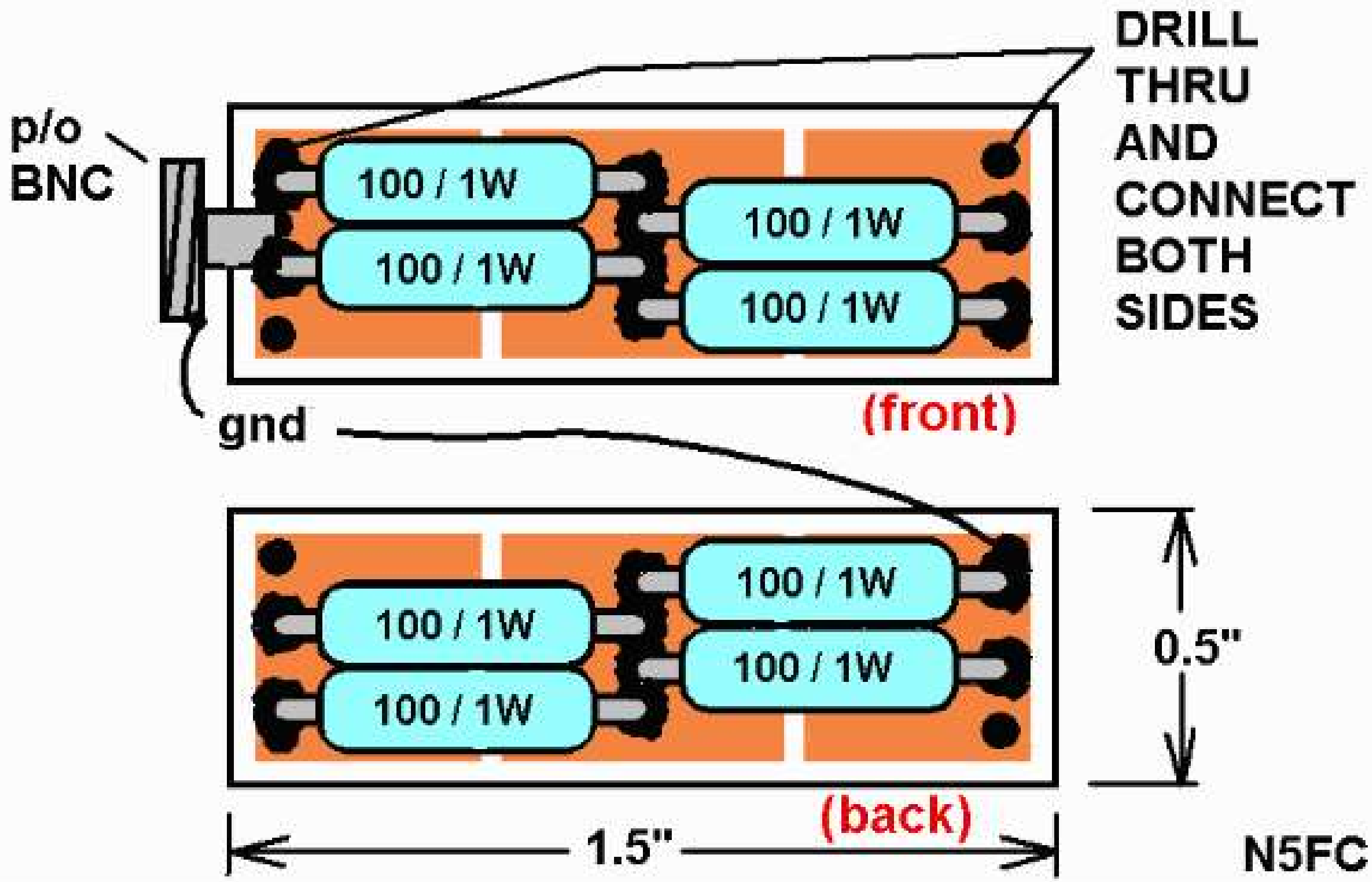


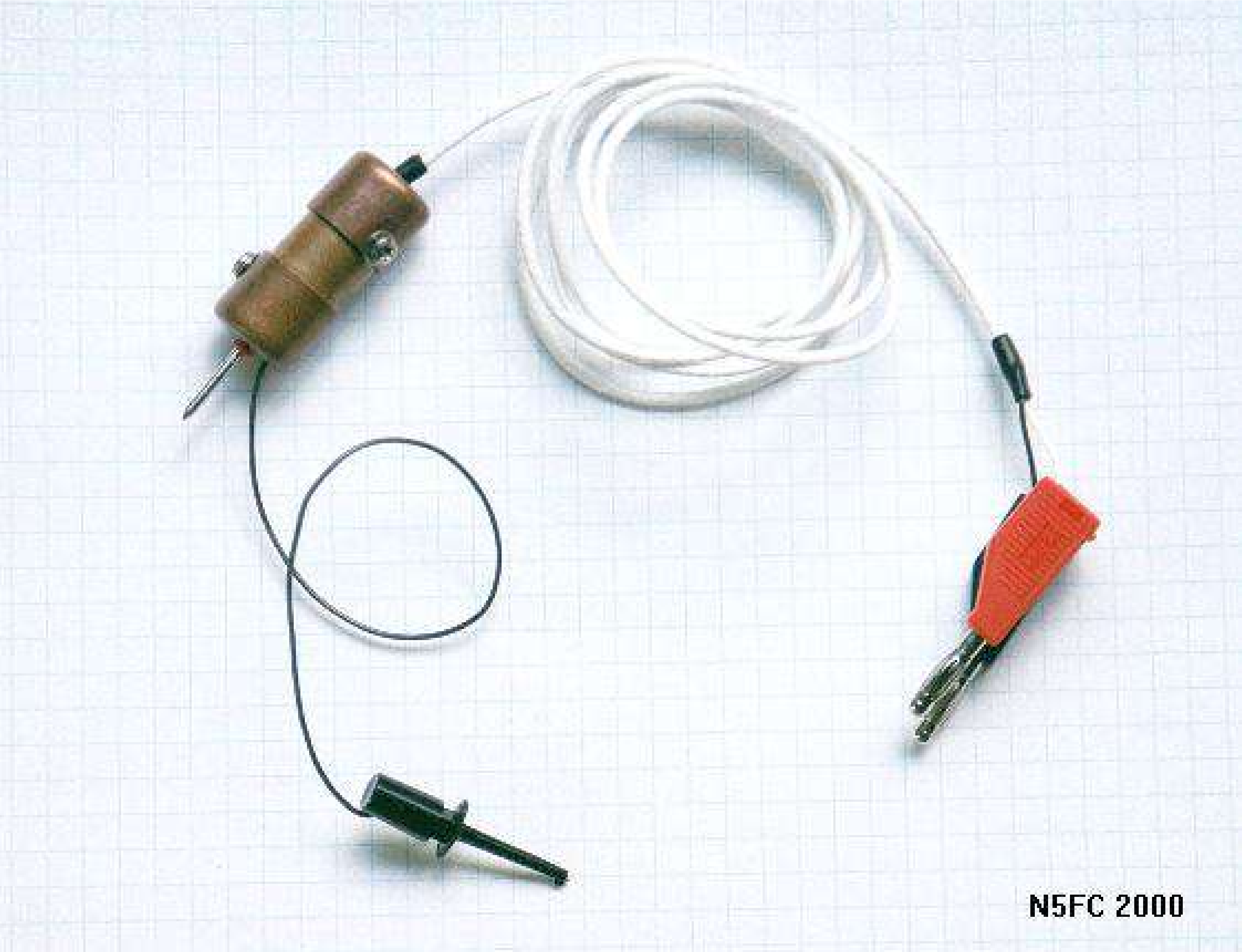
CONNECT FRONT & BACK LANDS
CONNECT FRONT & BACK LANDS
p/o
BNC
100 / 1W
100 / 1W
100 / 1W
100 / 1W
.01
R
RF
DET
OUT
(front)
gnd
CONNECT
F&B LANDS
0.5"
100 / 1W
100 / 1W
100 / 1W
100 / 1W
D
GND
CONNECT
F&B LANDS
(back)
N5FC
2.0"


N5FC
QRP DUMMY LOAD
max: 8-Watt (cont)
N5FC 2000

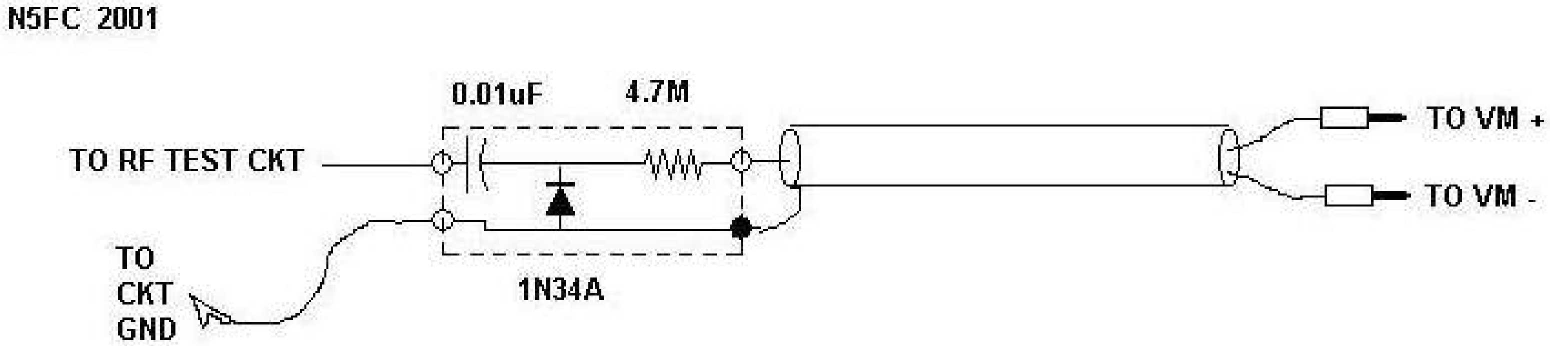


QRP DUMMY LOAD
TO TX
8 EACH
100-OHM
1-W
TOP
SIDE
BOTTOM
SIDE
N5FC 2000


DRILL THRU AND CONNECT BOTH SIDES
p/o BNC
100 / 1W
100 / 1W
100 / 1W
100 / 1W
gnd
(front)
100 / 1W
100 / 1W
100 / 1W
100 / 1W
0.5"
(back)
1.5"
N5FC


N5FC 2000

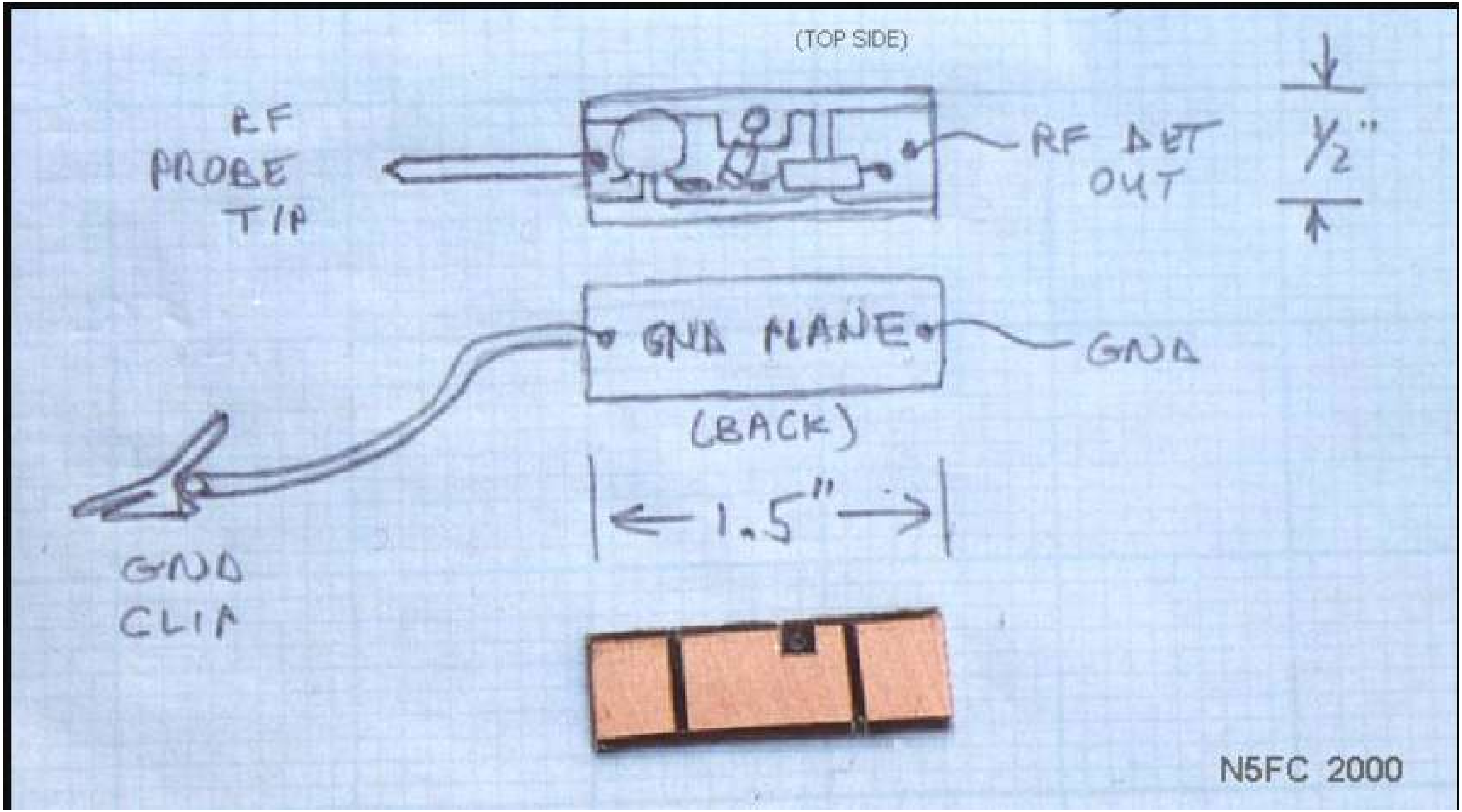
sic RF Probe. Simple, eh?



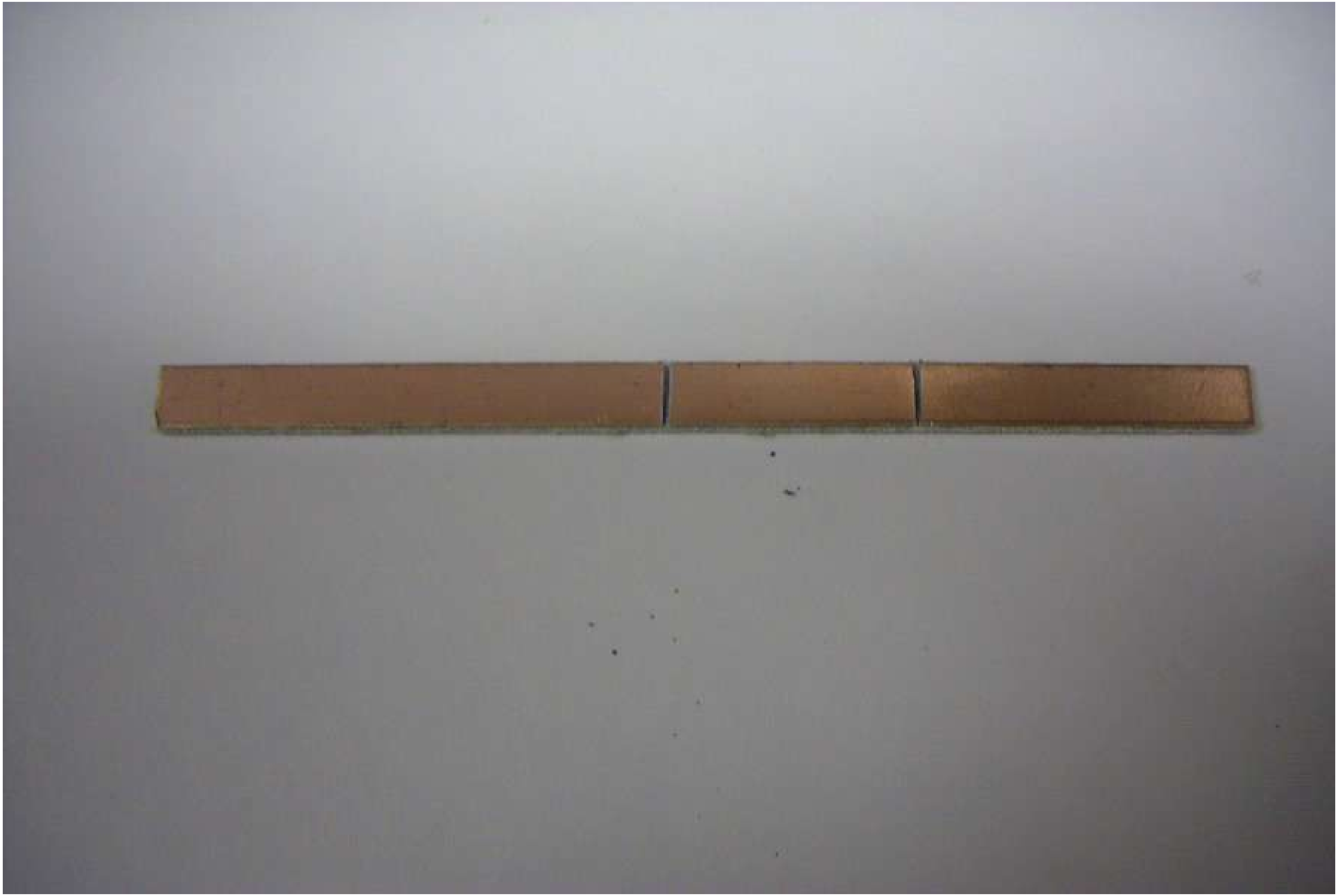
CLASSIC RF PROBE

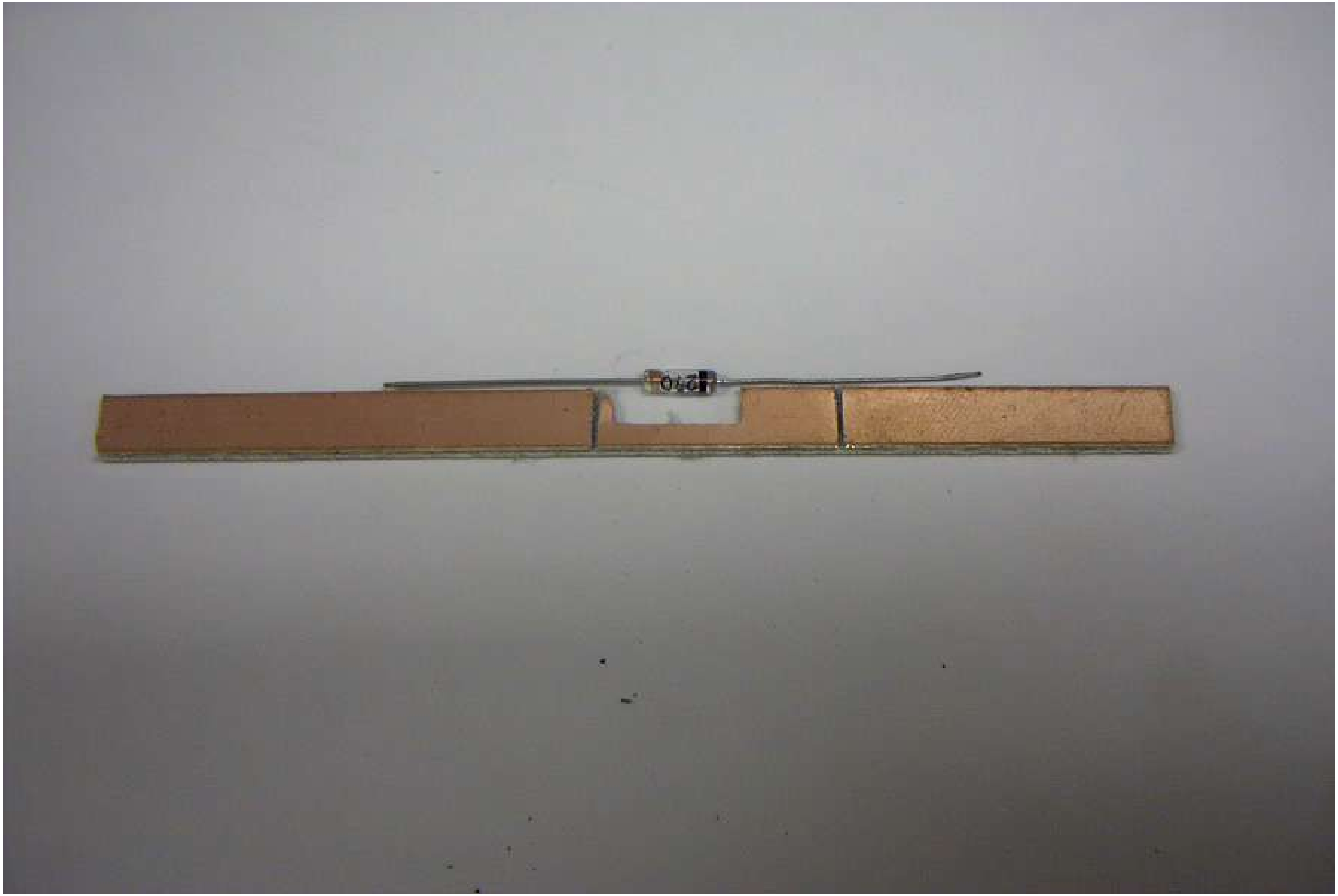
Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10 -11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)

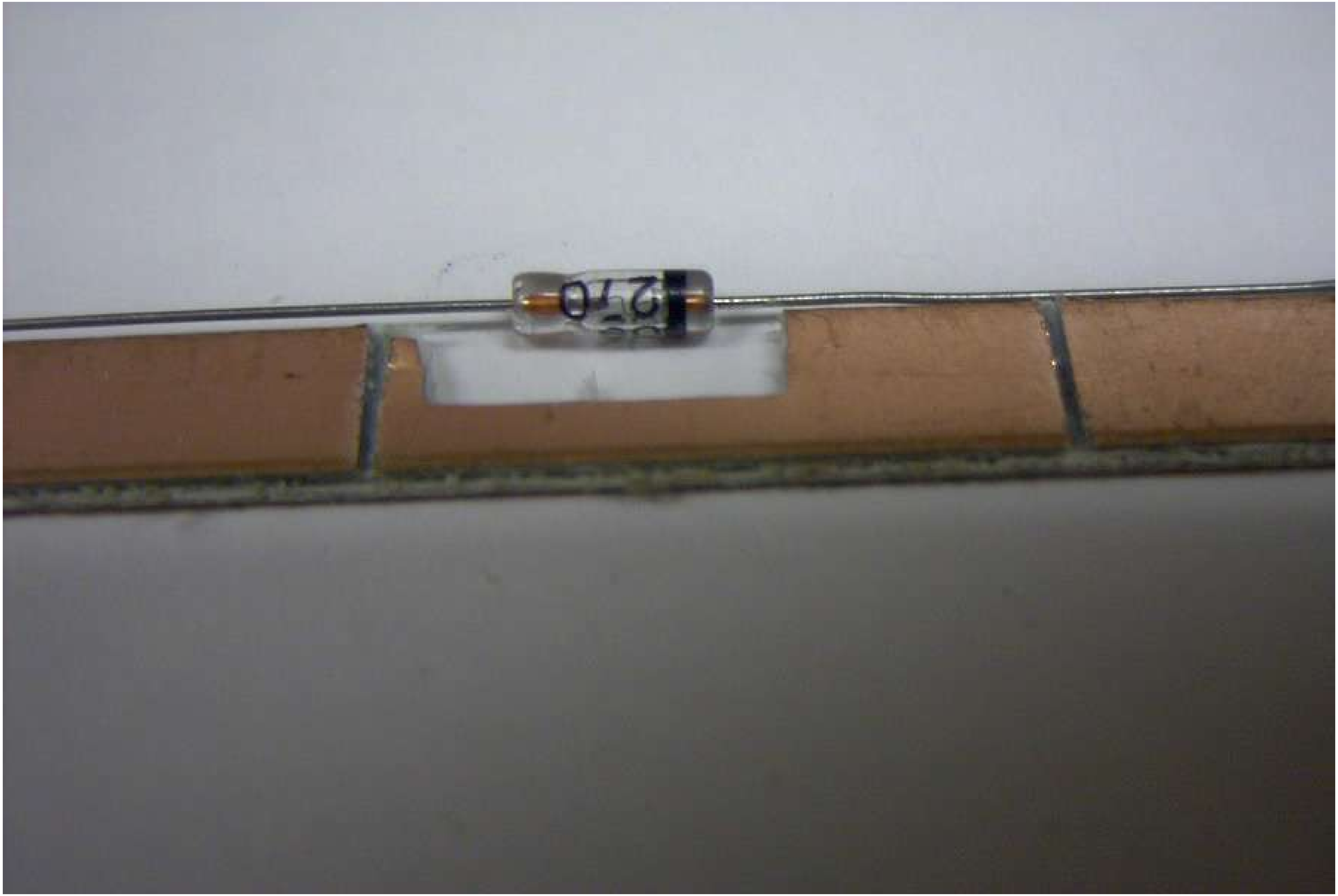
oretical discussion that we'll make short note of. Obviously, for "probing" we need a "probe". (Hey! No wonder I get paid the big bucks...). We add a SH
obe goes to our test circuit, where we're probing. Brilliant! We don't want either of these to be long leads, because we're talking RF here, and long leads =

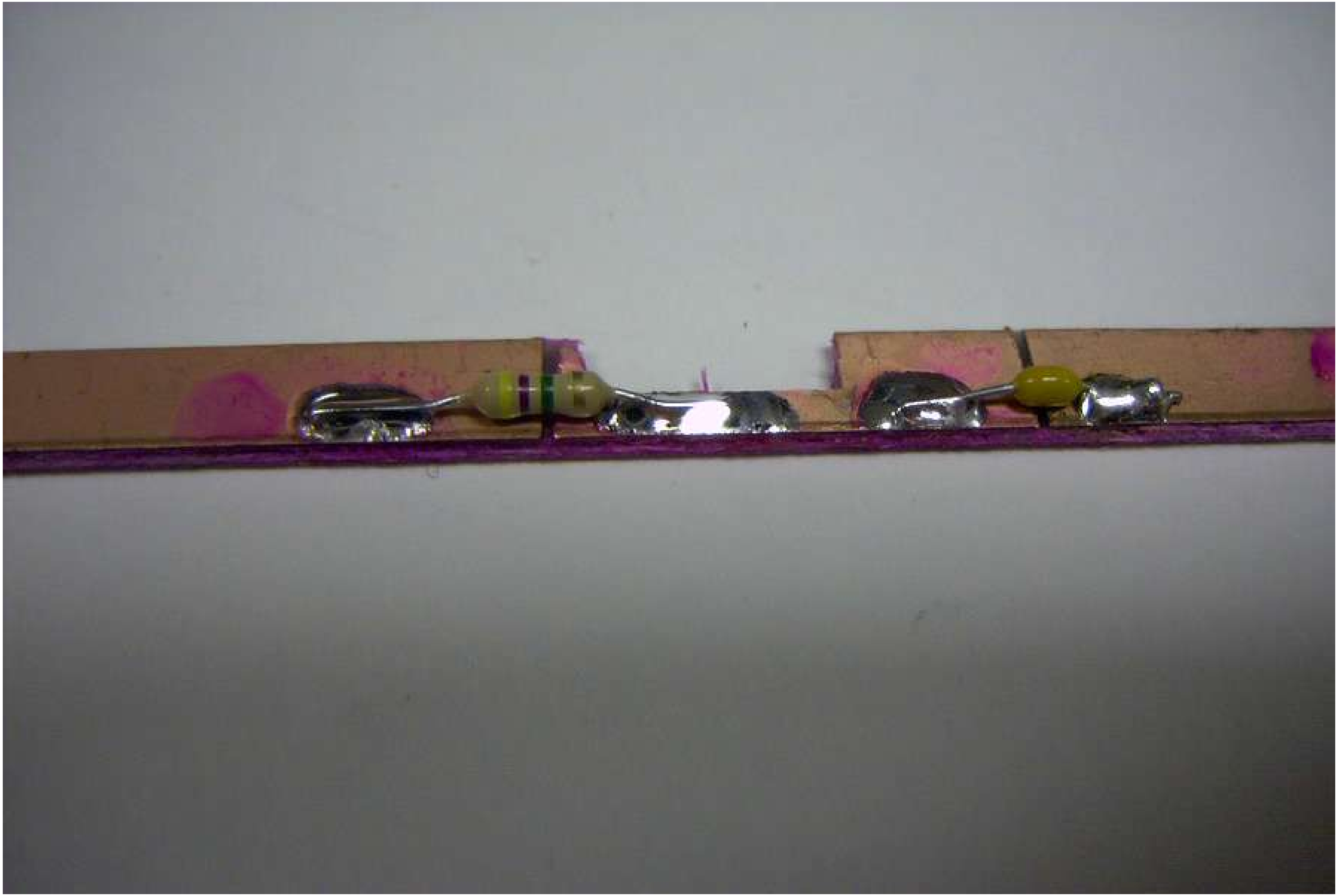

(TOP SIDE)
RF PROBE TIP
RF DET OUT
1/2"
GND PLANE
GND
(BACK)
1.5"
GND CLIP
N5FC 2000

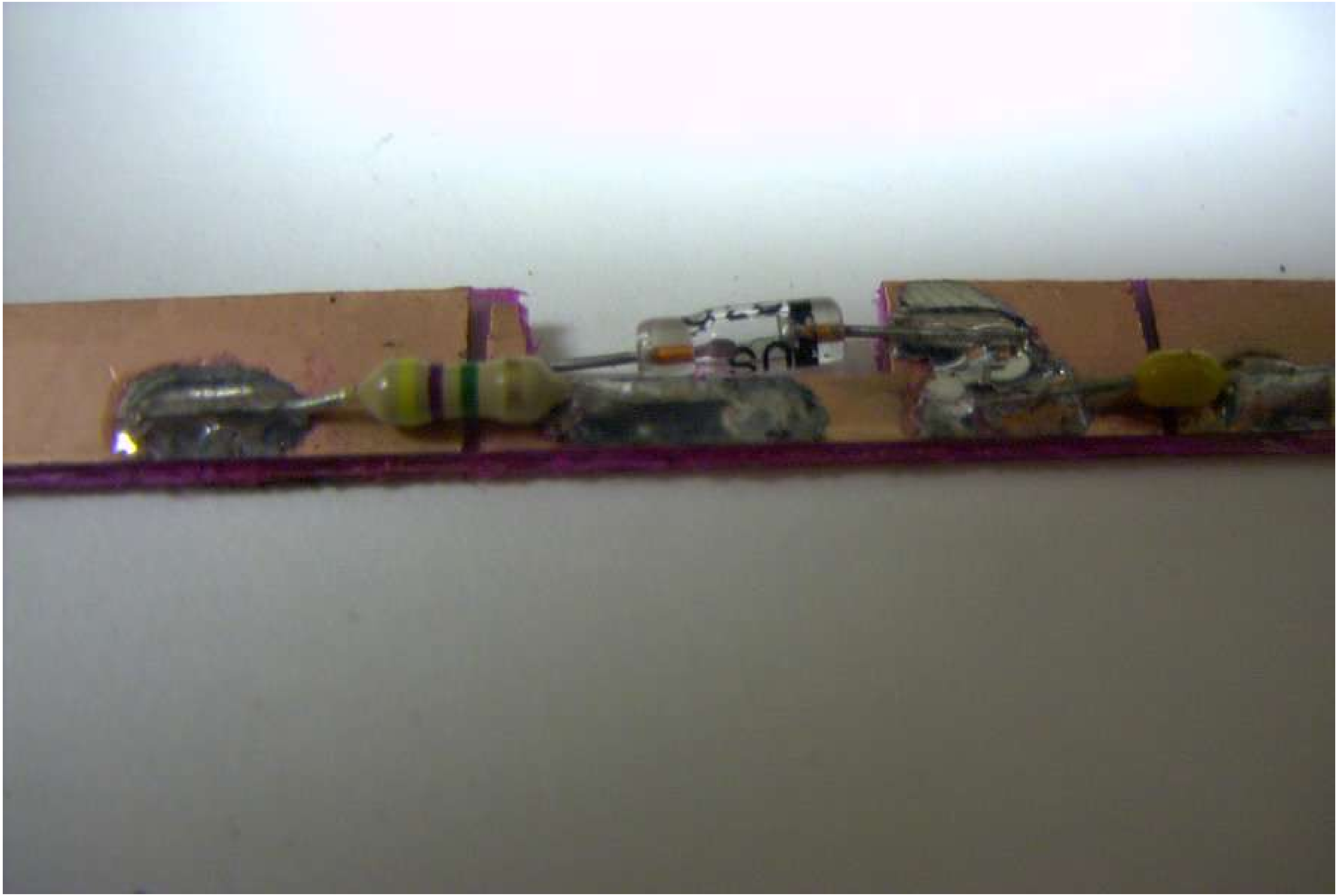

BIC round stic med/moy USA

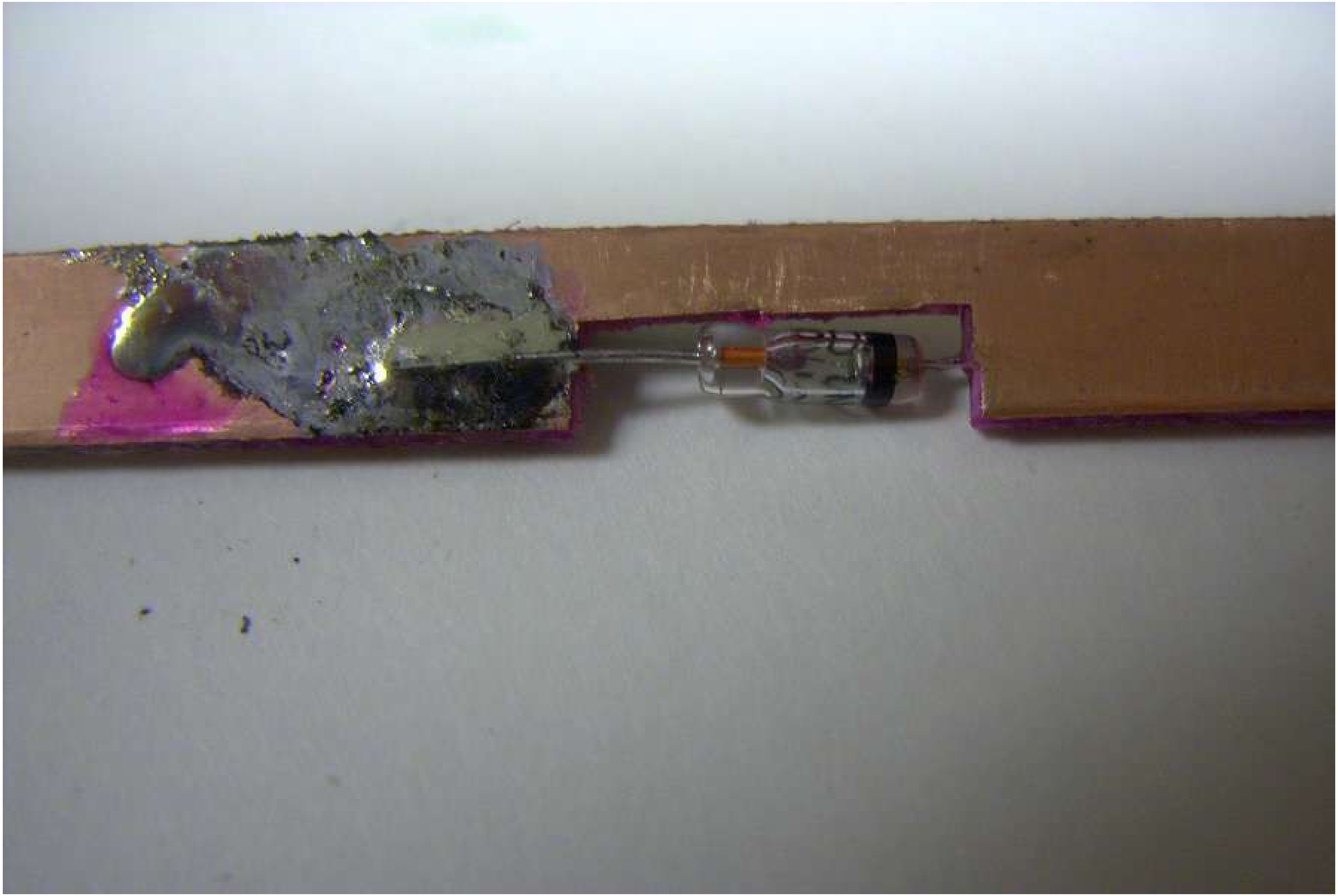








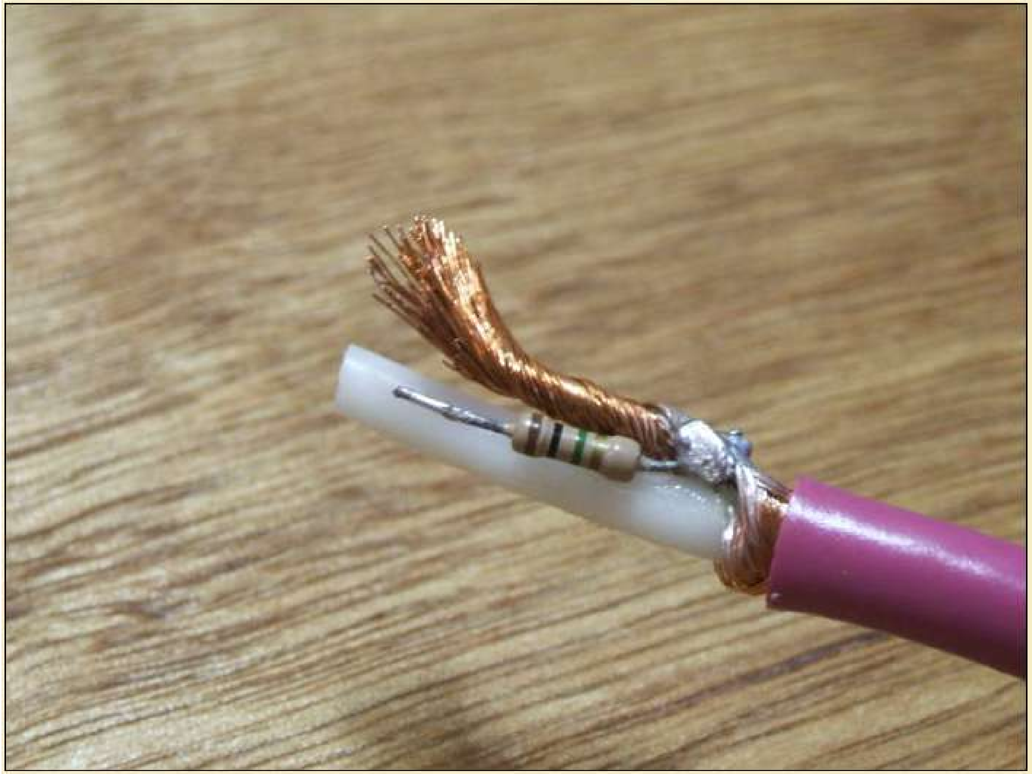
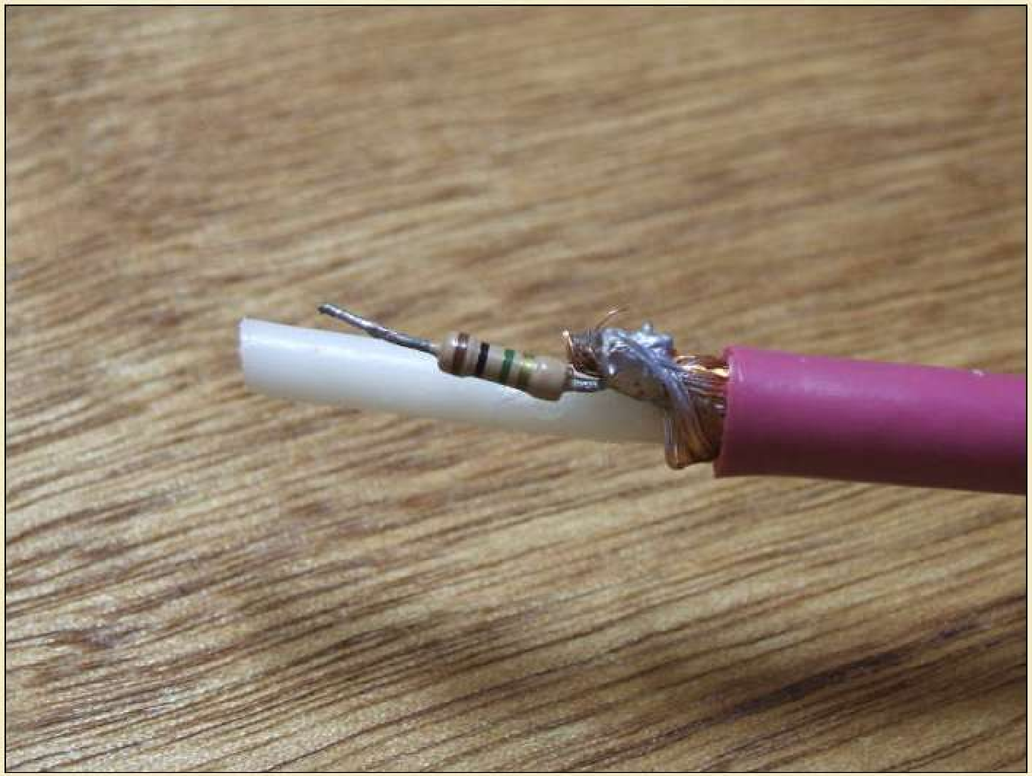


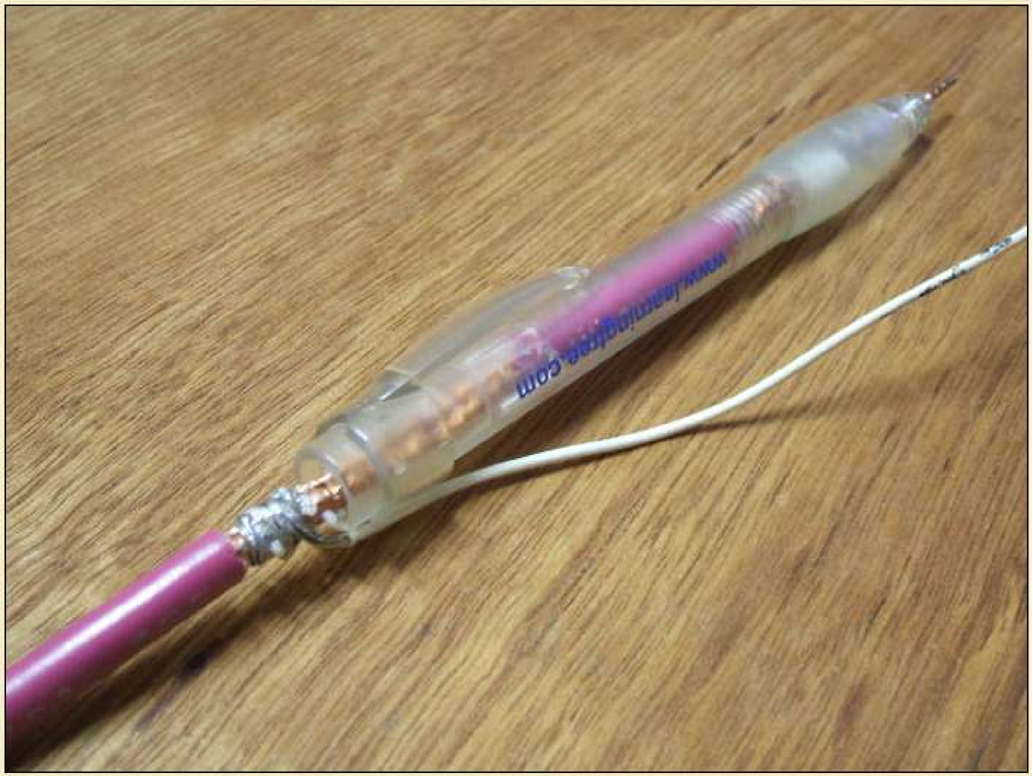


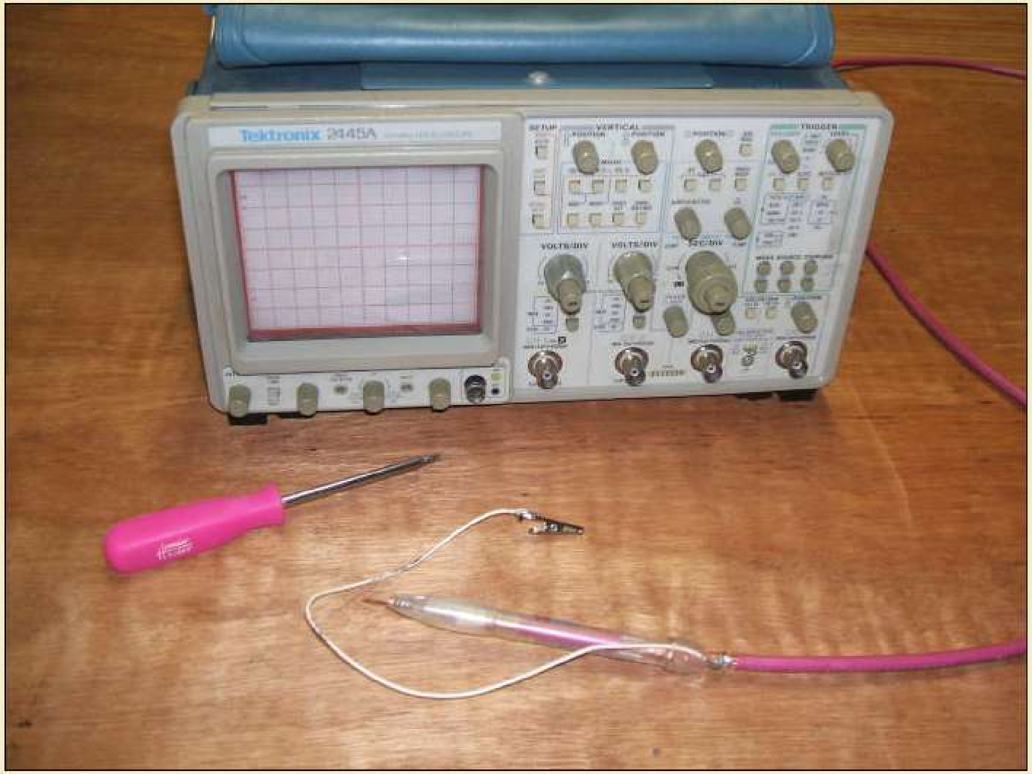
How to Build Your Own Oscilloscope Probes

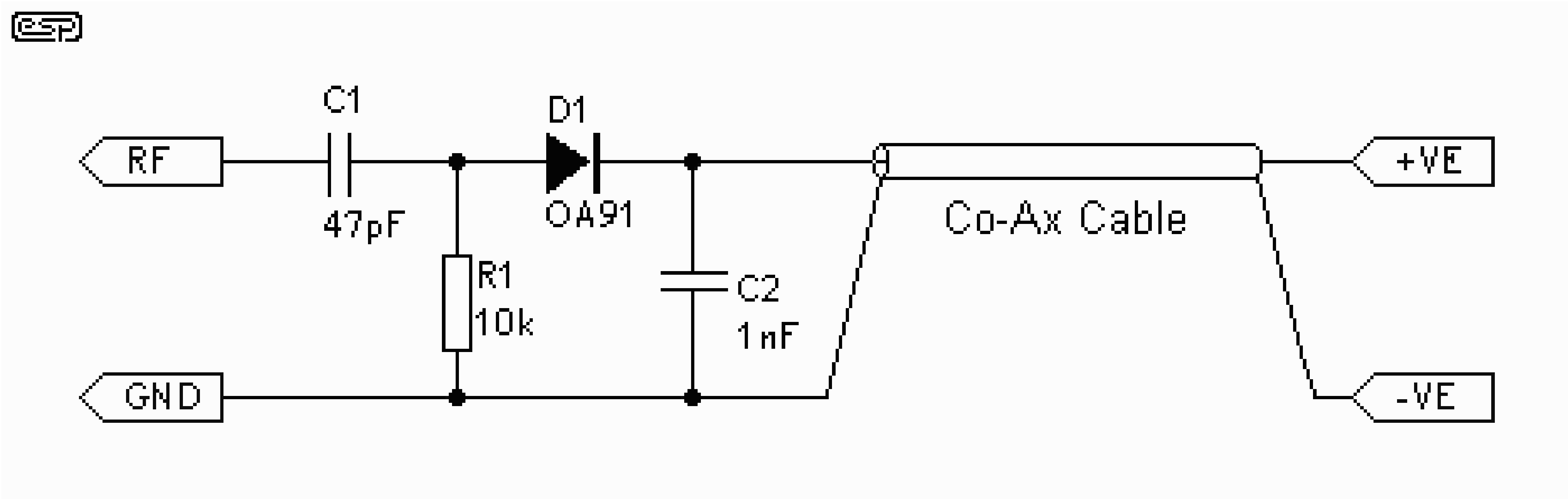
Here is the complete bill of materials:

- The pen
- A 2-meter piece of coaxial test cable with a BNC connector on one end
- Epoxy adhesive
- One alligator clip
- Copper-plated nail — 0.75" (20mm) long, packed as "weather-stripping nail".
- 1 MΩ and 5 MΩ resistors


www.learningtree.com


Tektronix 2445A
VERTICAL
TRIGGER
VOLTS/DIV
VOLTS/DIV



RF
GND
C1
47pF
R1
10k
D1
OA91
C2
1nF
Co-Ax Cable
+VE
-VE

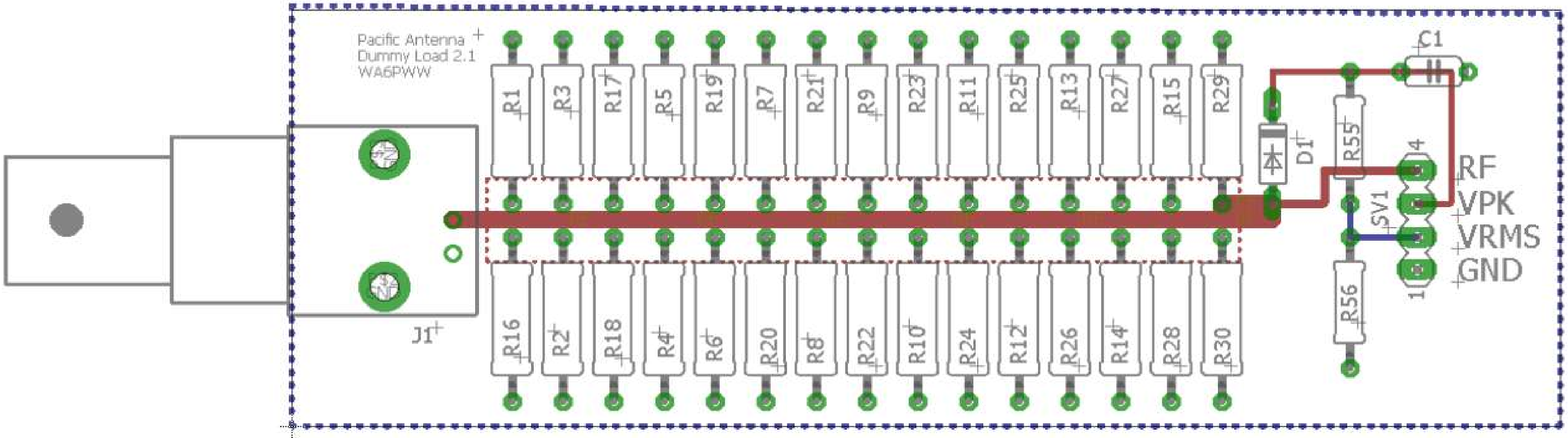
Pacific Antenna 15 Watt Dummy Load Kit

Inspection and Inventory

First, check the kit to be sure all parts are included. Should anything be missing, please contact us for a replacement.

30 – R1-R30, 1.5 K 1/2 watt resistors: Brown-Green-Red-Gold
1 – R55: 41.2K 1/4W, 1% resistor: Yellow-Brown-Red-Red--Brown
1 – R56: 100K 1/4W, 5% resistor: Brown-Black-Yellow-Gold
1 – D1: 1N4148 diode
1 – C1: 0.01uF monolythic capacitor, yellow, (marked 103)
1 – J1: BNC board mount connector
1 – SV1: 4 pin header
1 – Circuit board

Board Layout



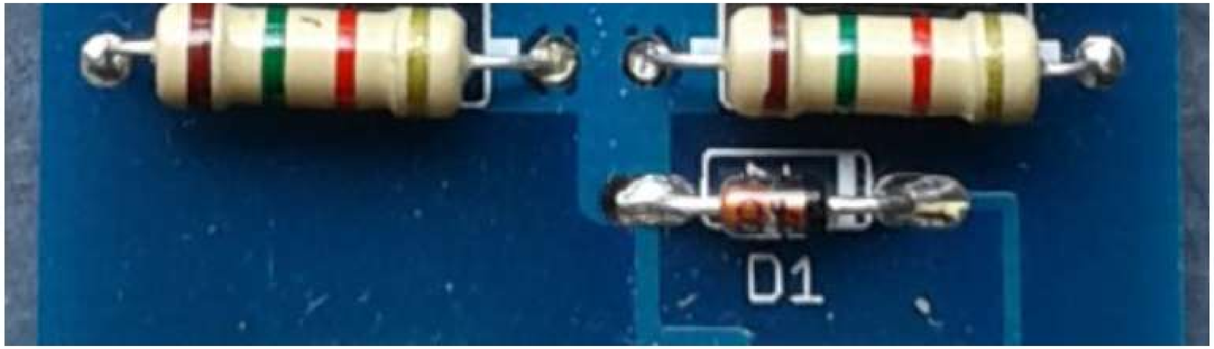
Assembly

Install R1- R30
These are the 1/2W. 1.5K ohm resistors and they go in the marked locations shown on the circuit board.

You may find it helpful to do one row of the resistors at a time to make soldering the leads easier.

First, pre-bend the leads near the resistor bodies and then insert them into the board.

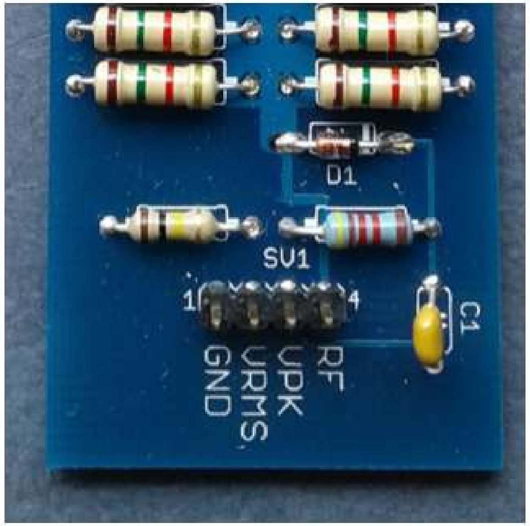
Install, solder and trim the leads of D1. Be sure to match the band end to the diagram above and the outline on the circuit board.



Install R55 the 41.2K ohm (Yellow-Brown-Red-Red—Brown) resistor in the marked location on the board

Install R56, the 100K resistor (Brown-Black-Yellow-Gold) in the marked location on the board.

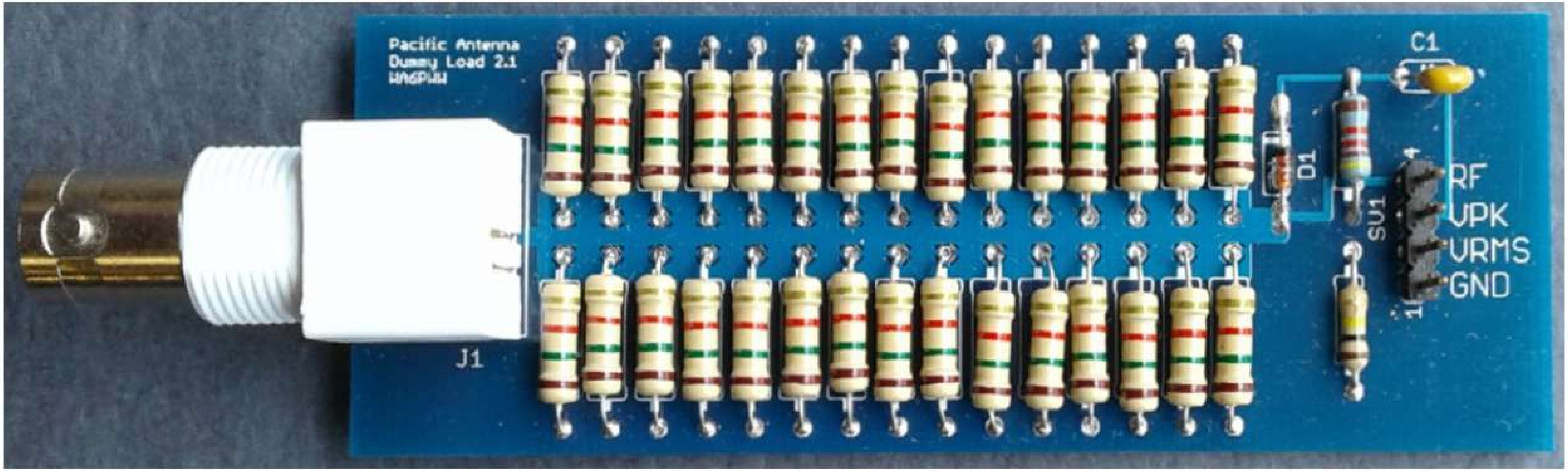
Install C1 the 0.01uF capacitor in the location marked on the board.



Now, solder the BNC connector, making sure to seat it fully into the board. Solder the two small wires and the two support pins.

The support pins may require longer time, increased temperature or a larger soldering iron to properly solder.

Congratulations, your dummy load kit is now complete!



Operation

The dummy load is easy to use. Simply connect your transmitter input to the BNC

To measure RF Power, connect your multimeter to pin 1 and Pin 2 or 3.

Pin 1 is ground and the DC output voltages appear on pins 2 and 3 of SV1.

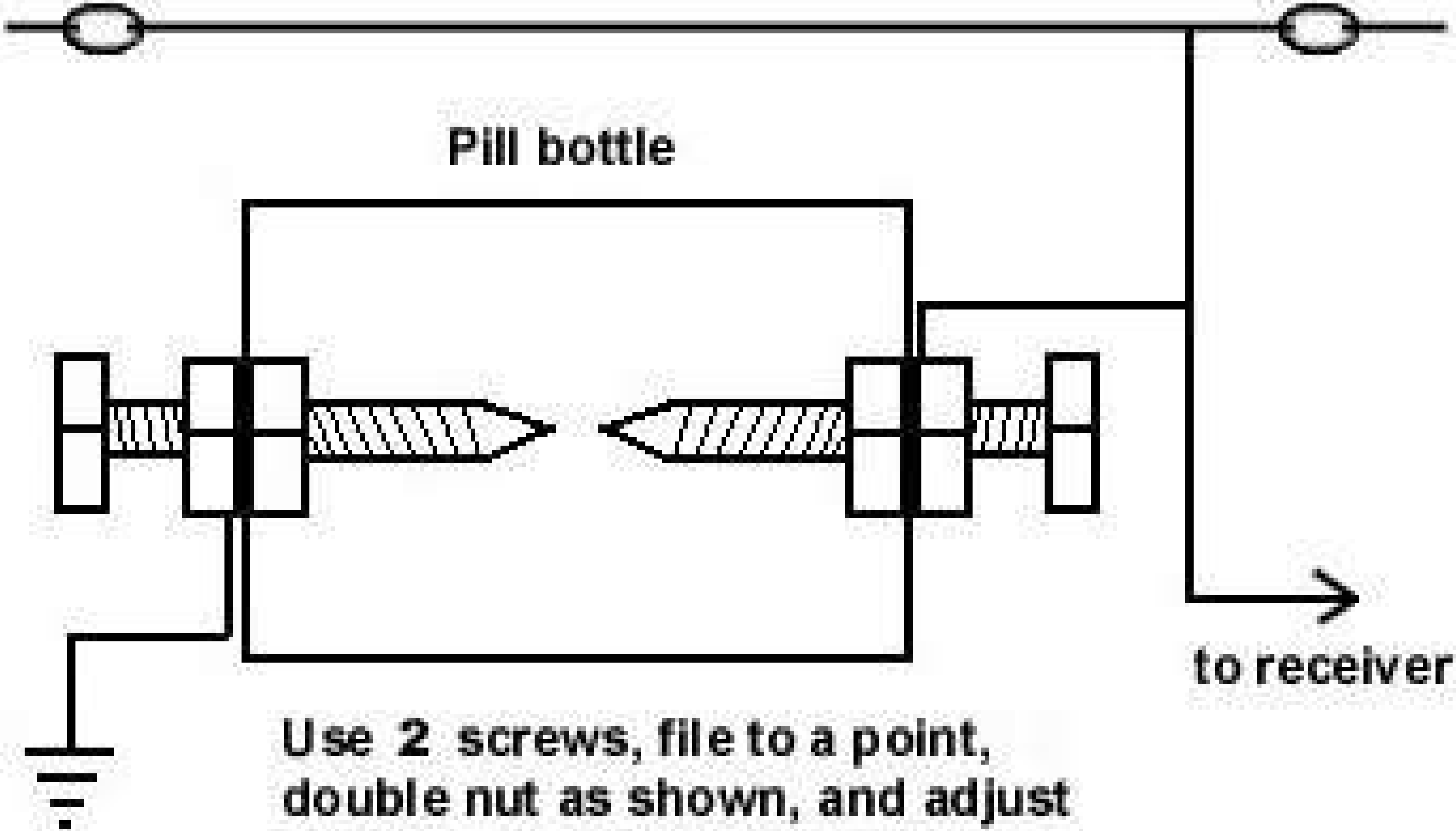
Pin 2 provides the RMS value of the RF voltage.

Pin 3 gives the Peak value of the RF voltage.

Pin 4 is direct RF voltage across the resistors.

RF power is calculated from this relationship: Power = (Vrms^2)/50

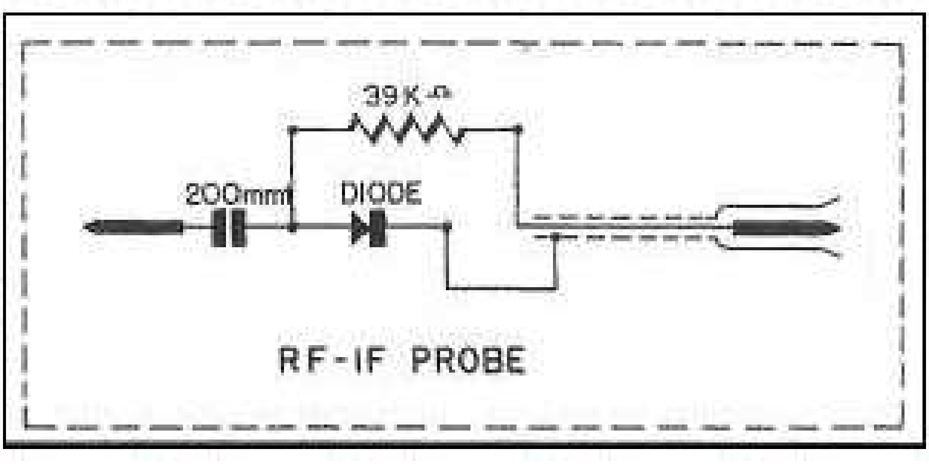
Note: The power input should be limited to 15W to avoid damaging the resistors and sense circuit components.



Use 2 screws, file to a point, double nut as shown, and adjust gap to about 1/4"


R.F. BANDS
R.F. BANDS
Signal Generator & Tracer
A.F. ATTENUATOR
PREAMP
OUTPUT

Accurate Instrument model 153 and its RF probe schematic
courtesy of John Lescaud.



... Top Quality, Low Prices, Dependable Service

LAFAYETTE COMBINATION SIGNAL GENERATOR AND SIGNAL TRACER

NOT A KIT — FACTORY WIRED AND TESTED

SIGNAL GENERATOR

- Covers From 250 KC to 120 MC in 5 Bands
- High Stability Electron Coupled Oscillator
- Attenuator For Both RF and Audio Circuits

SIGNAL TRACER

- Hi-gain Cascode Pre-amplifier
- Front Panel Output For VTVM, Scope or Phones
- Low Distortion Triode Output Stage
- Separate R.F. and Audio Signal Probes

...o test instruments in one! The Signal Generator will serve as a full service ...strument and the Signal Tracer will follow any signal whether generated by a ...oadcasting station or injected by the Signal Generator section. When used in ...mbination, with no dependence on outside signals, the unit provides ideal ...rvice, for unlike any standard signal tracer, it first injects its own signal then ...ses that controllable signal to locate the source by standard signal tracing ...chnique. Designed for use with AM, FM, TV and audio circuitry. Features 5 ...equency ranges and an attenuator switch to control both the R.F. signal (either ...odulated or unmodulated) and the 400 cycle audio tone. Front panel output ...cks which can be used for oscillioscope, VTVM or earphone connections. Housed ...a beautiful crackle finish steel cabinet with a deep etched aluminum panel. ...mensions: 7½x9½x5¾". Complete with 2 probes. Shpg. wt., 9 lbs.

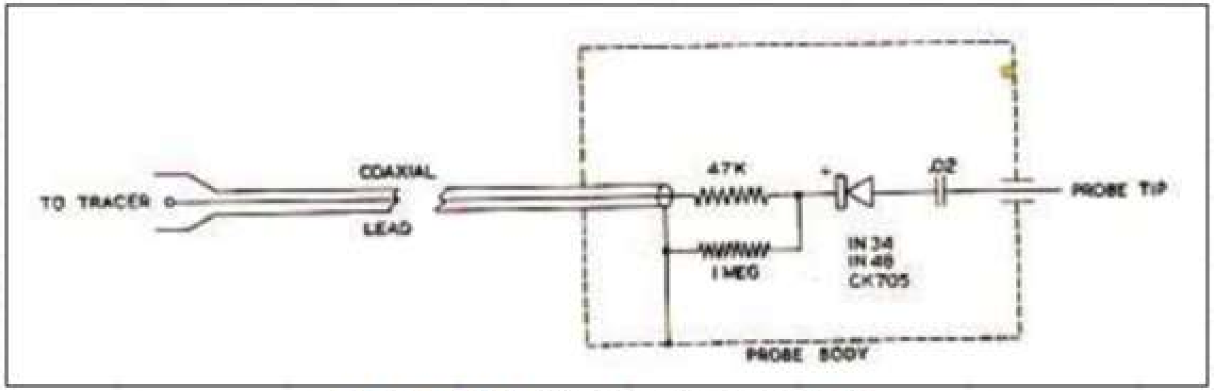
...R 0102 .... Net 24.95

SPECIFICATIONS

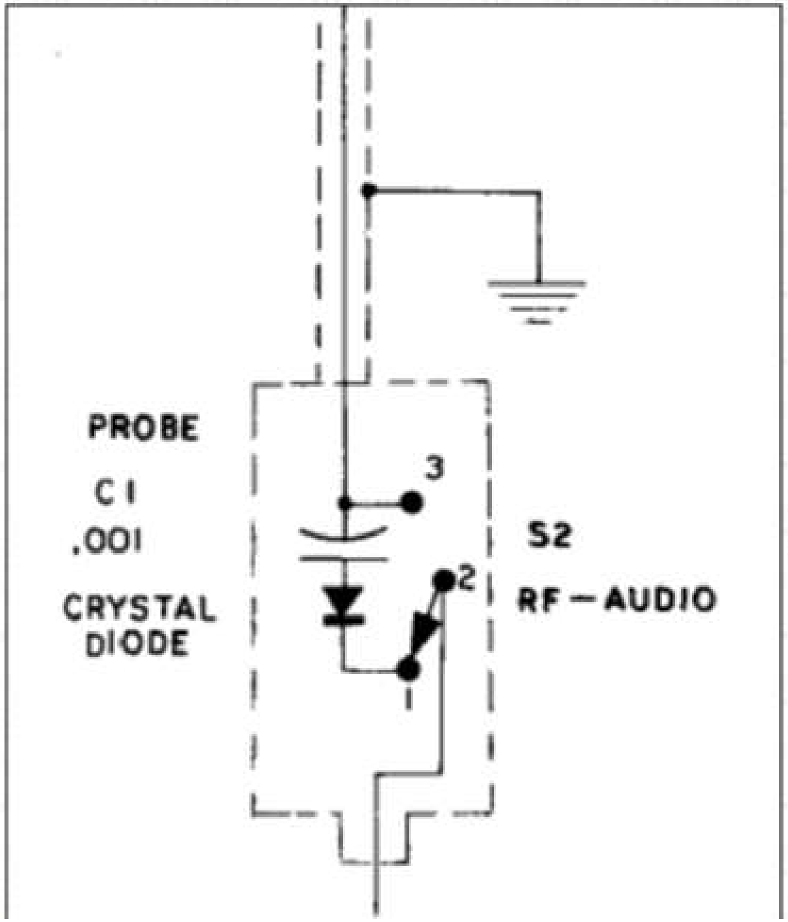
...NGE: Band A: 250KC to 850KC; B: 850KC-3000KC; C: 3.0MC to 11MC; D: 11MC ...35MC; E: 35MC to 120MC; 400cps audio signal; modulation slide switch, ...AF attenuator and power switch; Signal output jack; AF input jack, 2 Preamp. ...put jacks. 4½" alnico 5 speaker. Tubes: 5687, 6350, 6AG5 plus sel. rectifier.

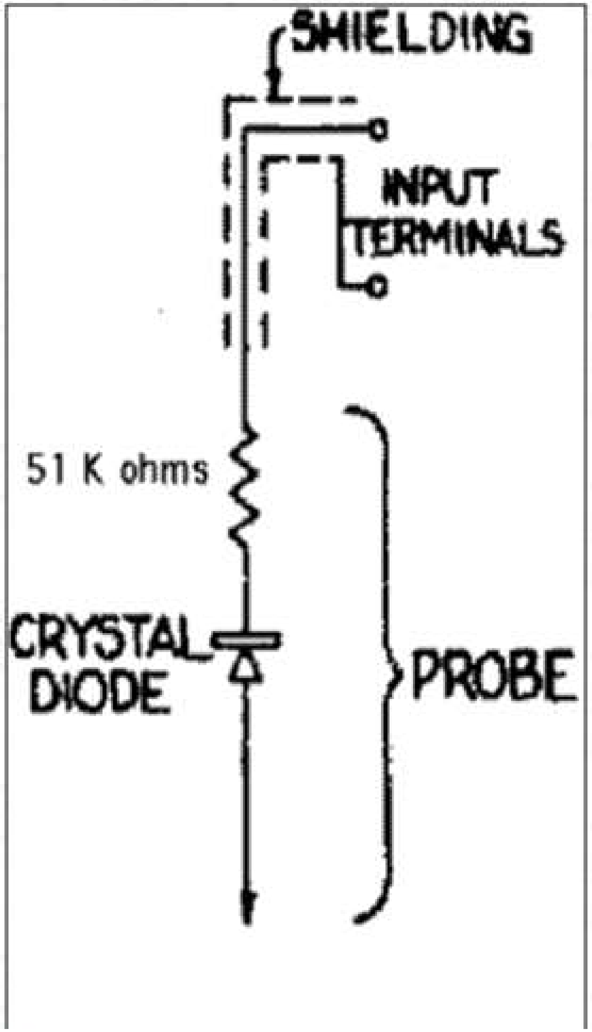
Made in U.S.A.

ONLY 24^{95}

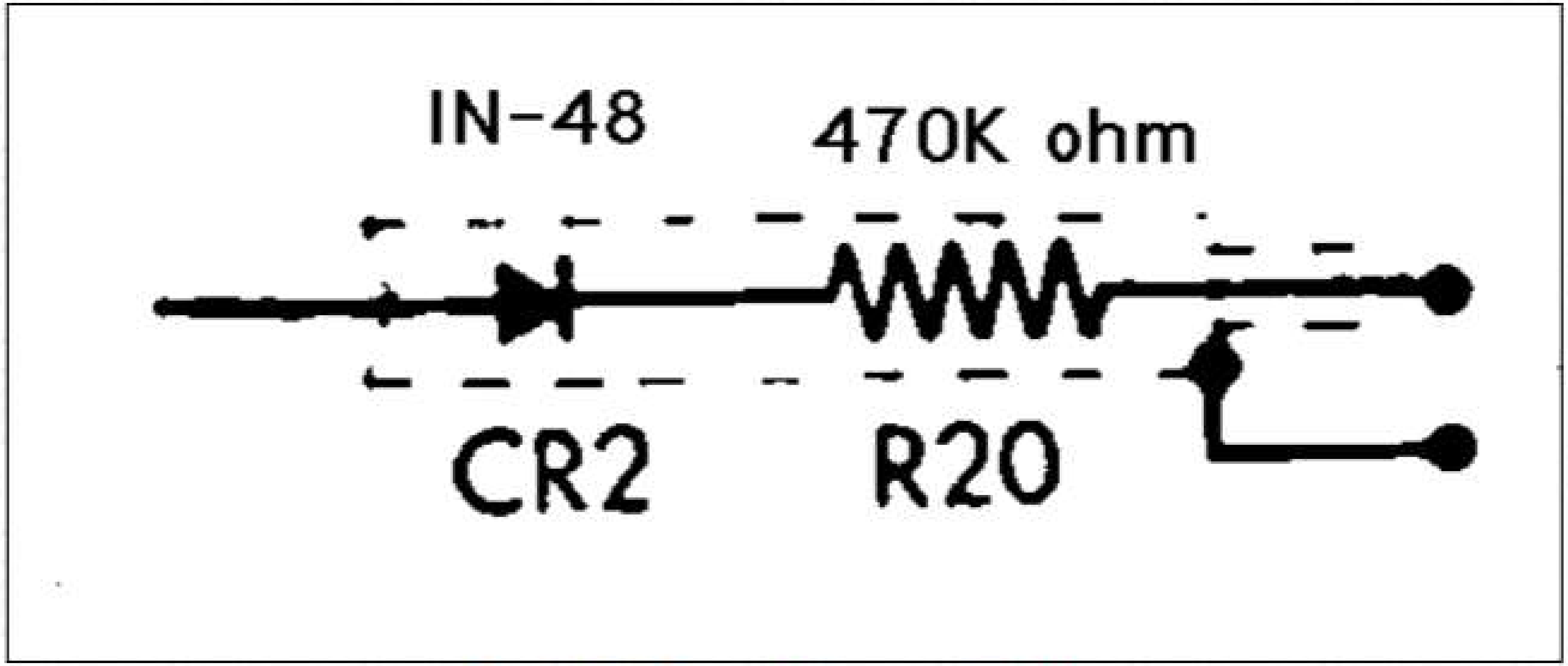


Heath T-3 signal tracer probe

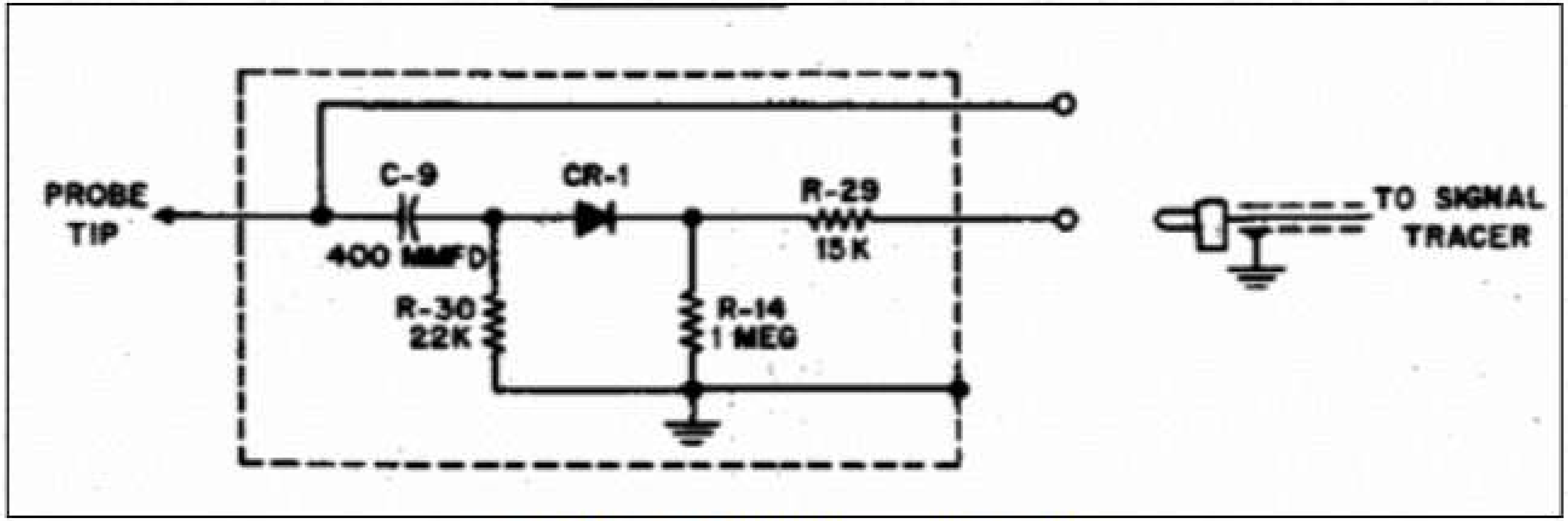




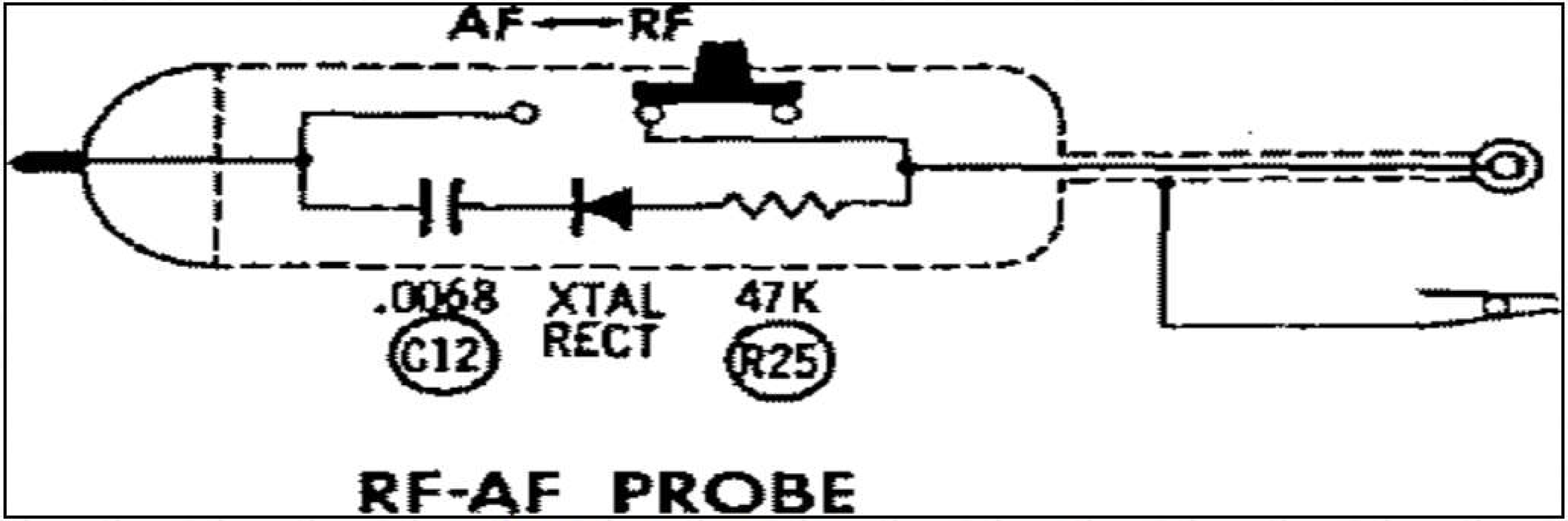
Heath T-4 or IT-12 signal tracer probe (left) - - - - Eico 145 signal tracer probe (right)



Eico 147a signal tracer probe

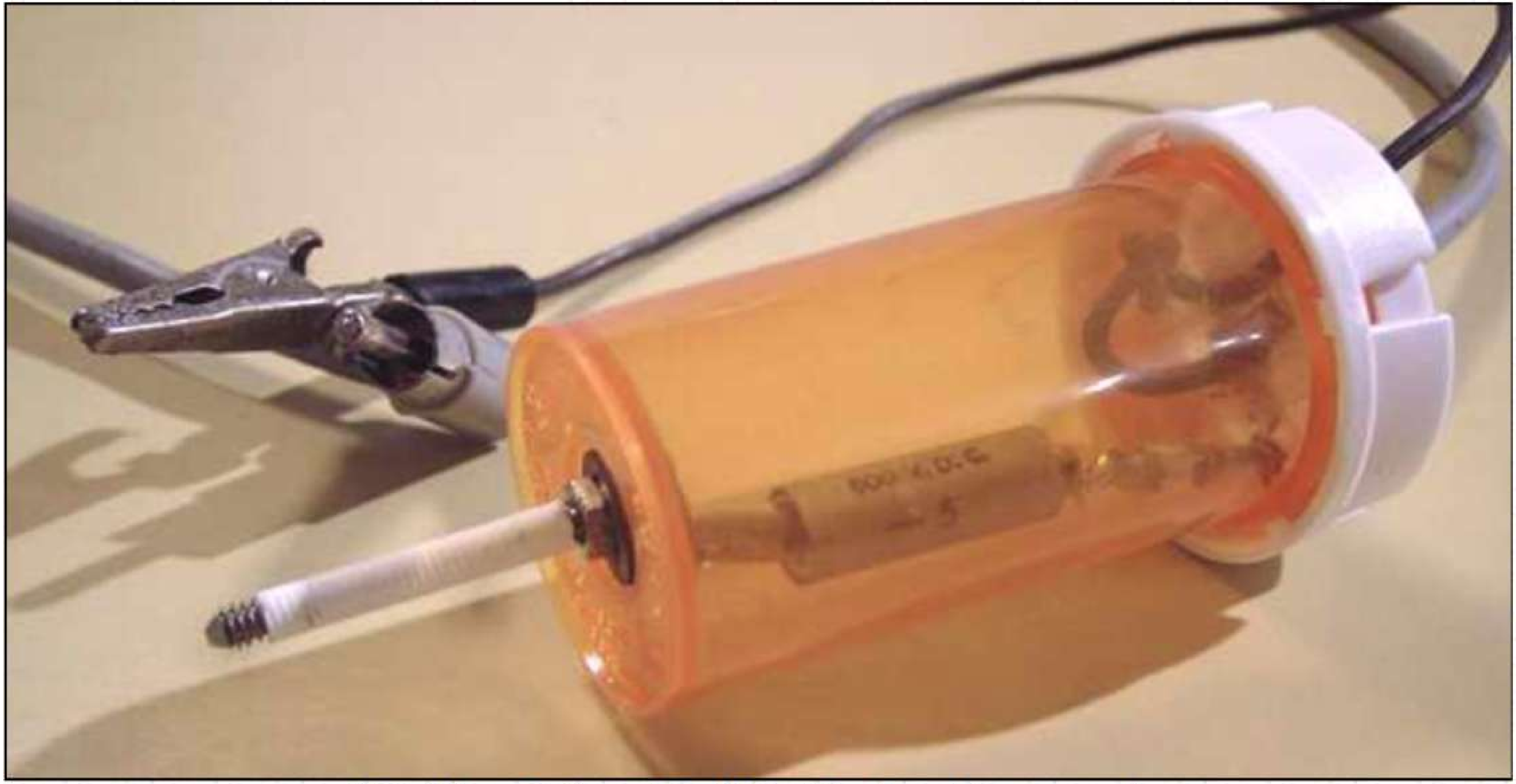


Knight-kit signal tracer probe



PACO Z-80 signal tracer probe

Pill bottle signal tracer probe



KIS (Keep It Simple) pill-bottle signal tracer probe

As you can see in figures 3 and 4, there is not much to this $120V_{AC}$ to $12V_{DC}$ adaptor.

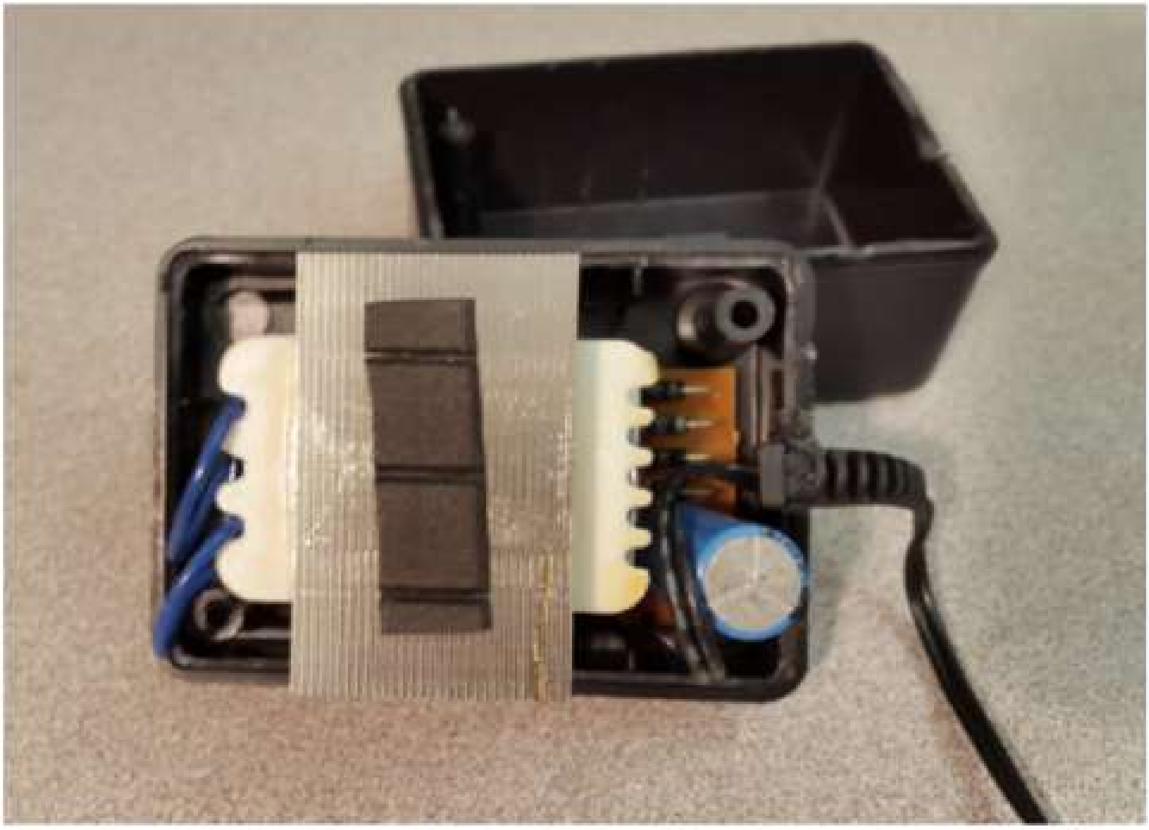


Figure 3. Top View of the Inside of the AC Adaptor

Figure 4. AC Adaptor Components Spread Out

The Bridge Rectifier

The next stage in the wall adapter is the bridge rectifier. This device takes the AC output of the transformer and converts it into a DC voltage. It does this using an arrangement of diodes that force the current to pass through the load in one direction only. Figure 8 shows the diodes in the adaptor along with a schematic representation of how the diodes are connected together.

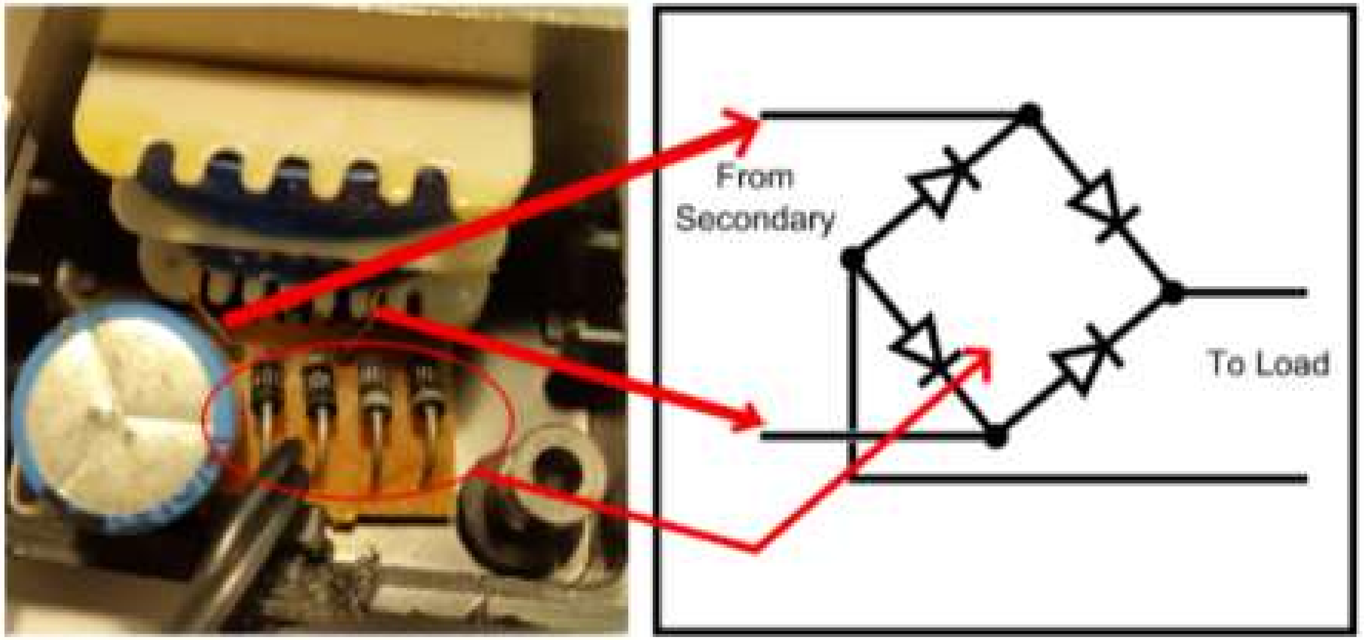


Figure 8. Full Bridge Rectifier Circuit and Schematic

The bridge rectifier in this wall adapter is made of four individual diodes (part number 1N4001), but sometimes the rectifier is a basic integrated circuit with the four diodes manufactured all in one device like in figure 9.

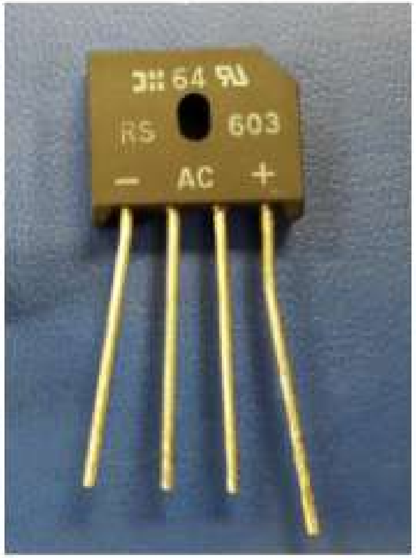


Figure 9. Bridge Rectifier in an IC

The output of the rectifier is only DC in the sense that current to the load is forced in one direction. The voltage is still varying a large amount as can be seen in figure 10. Effectively what the rectifier did was to take the negative portion of the voltage and flip it around to make it positive as shown in the figure below. The voltage still swings between 0V and the peak. Further processing must be done on the voltage to minimize the voltage swing and that is what the next stage does.

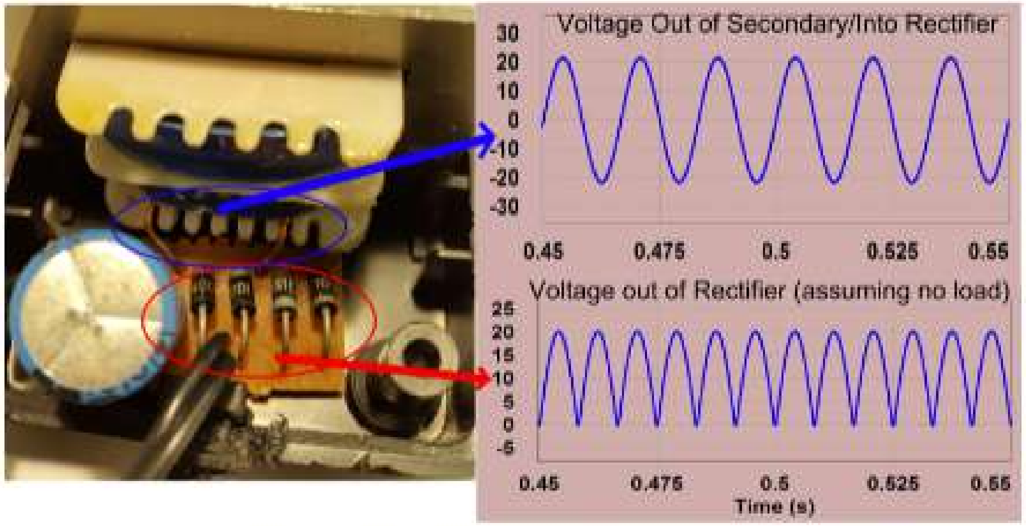


Figure 10. Rectifier Circuit Showing Input and Output Voltages.png

The Capacitor

The next problem to solve is how to take that varying voltage and smooth it out so that the load receives a more or less constant voltage. The main component in this fight against this ripple is the capacitor. The capacitor is the tall blue cylindrical component in figure 11 below:

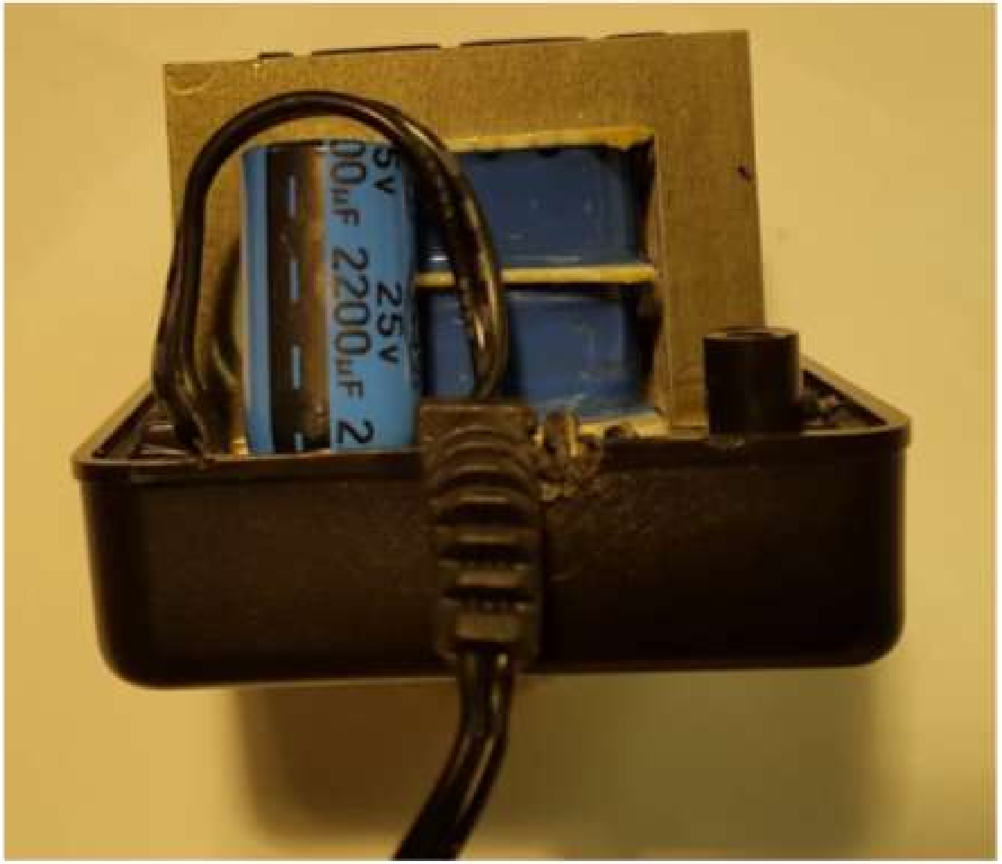


Figure 11. Capacitor in AC Adaptor

The capacitor in this wall adapter is a 2200 uF electrolytic capacitor. Electrolytic capacitors are typically used because it is possible to have a relatively high capacitance (100s or even 1000s of uF) and reasonable voltage tolerance (10's of volts) at an affordable price. For example, a quick search on an electronic component supplier's website shows me that a 2200 uF capacitor that can tolerate up to 50V is under $3 if it is an electrolytic capacitor and more than $250 if it is a film capacitor. The primary downside of electrolytic capacitors is that they have a much shorter life expectancy than film capacitors. In fact electrolytic capacitors are likely to be the component that fails first in any electronic system. Generally manufacturers

Transformer

Figure 5 shows the same adaptor seen from the side. The blue wires on the right are the inputs from the two-prong wall connection and they connect directly to the primary of the transformer. The output from the secondary can be seen at the lower left of the transformer as two small copper wires. The purpose of the transformer is to step the AC voltage down from the $120V_{RMS}$ from the wall outlet to a voltage that is closer to the required DC voltage.

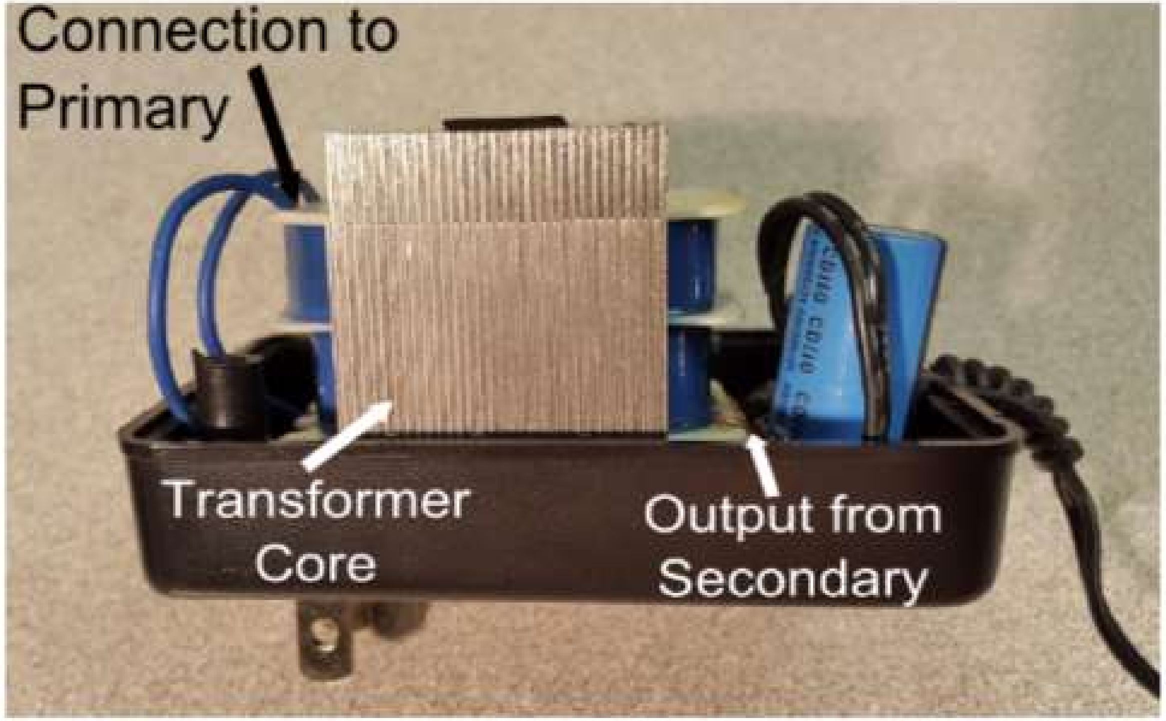


Figure 5. Side View of AC Adaptor with Transformer Labeled

If you ignore all of the non-ideal properties of transformers, they are very simple devices. The general idea is that there are two (usually large) coils of wire that are electrically isolated, but magnetically coupled together. The input side of the transformer is called the primary and the output side is called the secondary. Alternating current passes through the primary coil which creates an alternating magnetic flux in the transformer core. This alternating magnetic flux in turn induces a voltage in the coils of the secondary. The ratio of the number of loops in the primary coil to the number of loops in the secondary coil is equal to the ratio of the input AC voltage to the output AC voltage. In equation form this relationship is:

Full Circuit Recap

The preceding sections of this article show that the transformer, the rectifier and the capacitor are all that are required for a basic AC-DC converter. This final picture and schematic shows the end to end voltage processing done by the converter as it converts AC voltage into DC voltage.

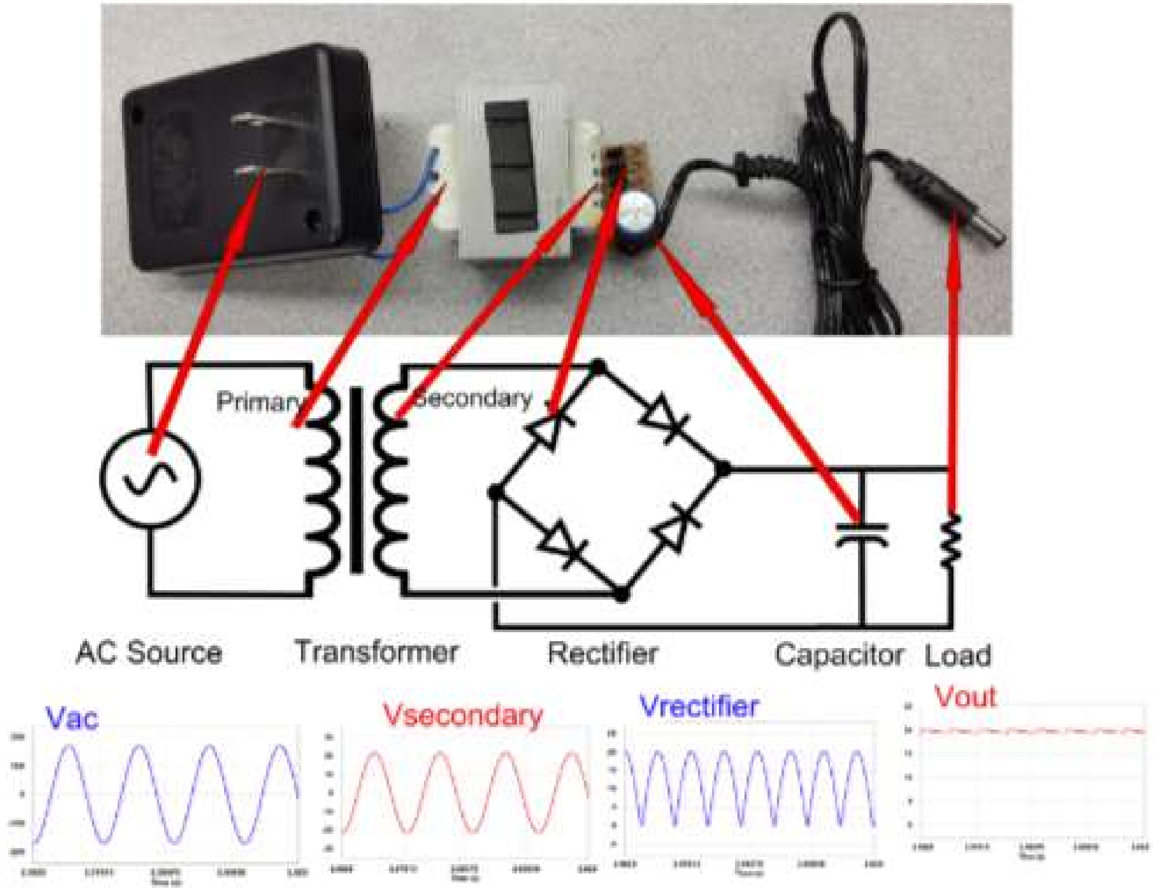
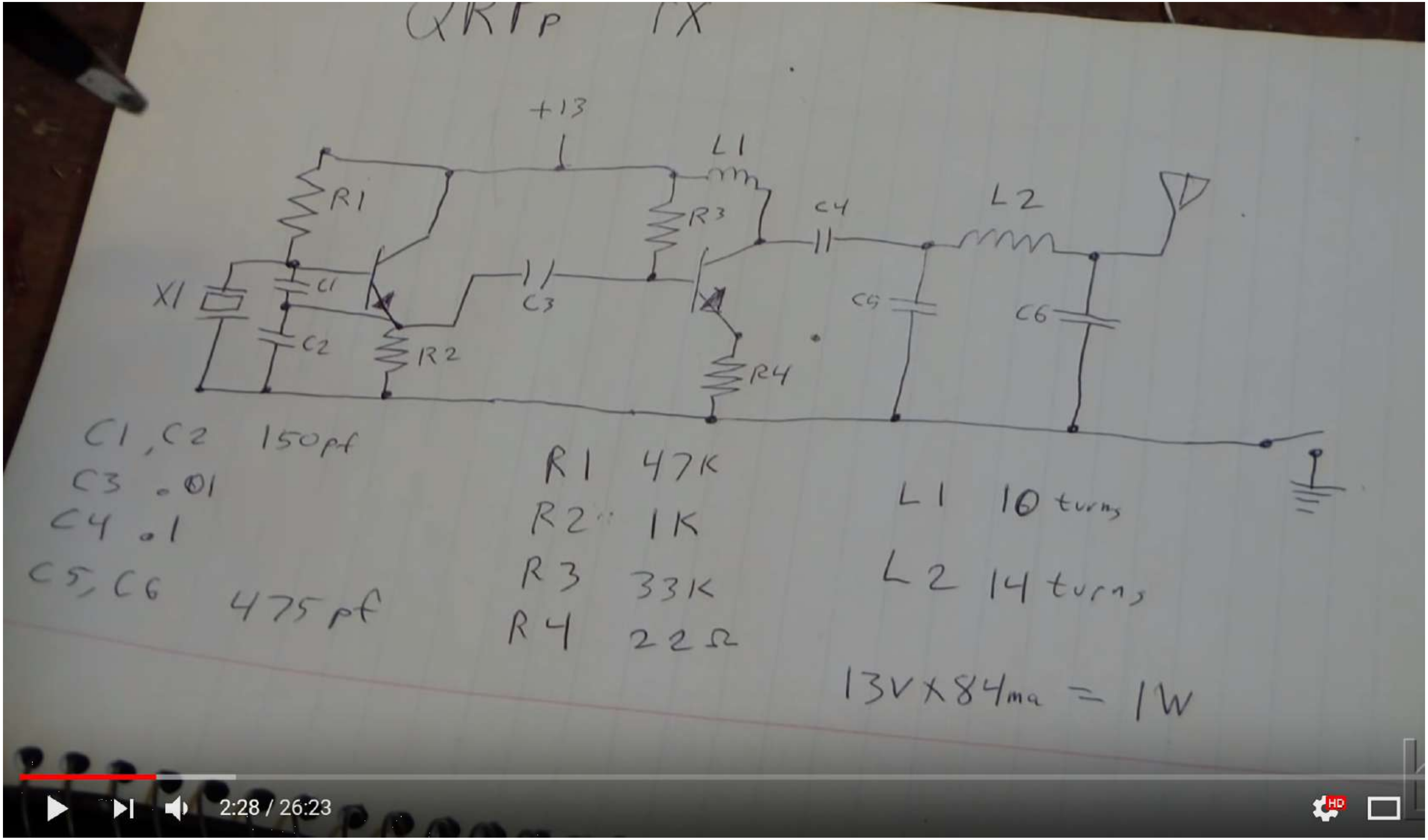
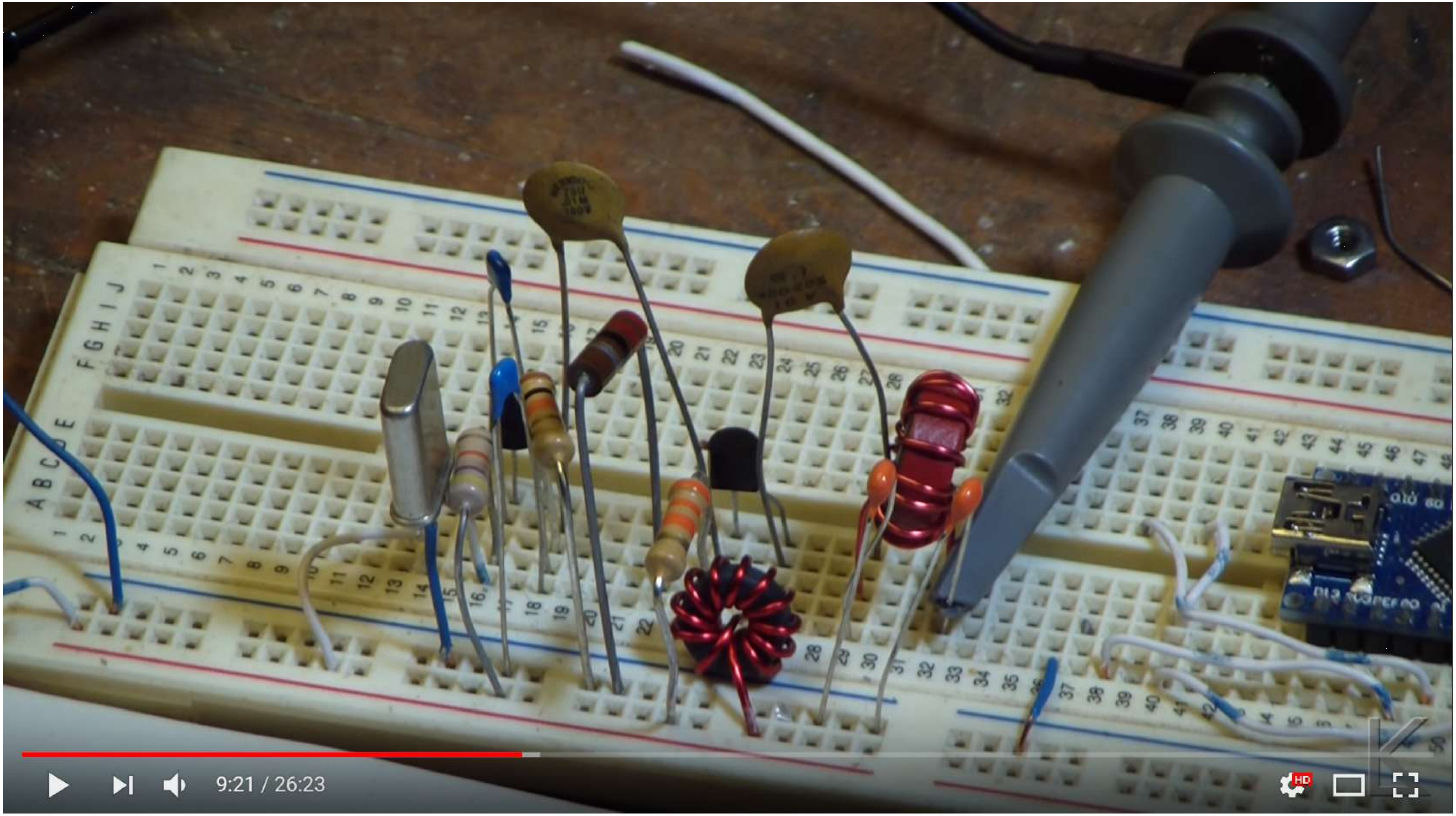


Figure 14. AC Adaptor, Schematic and Voltages

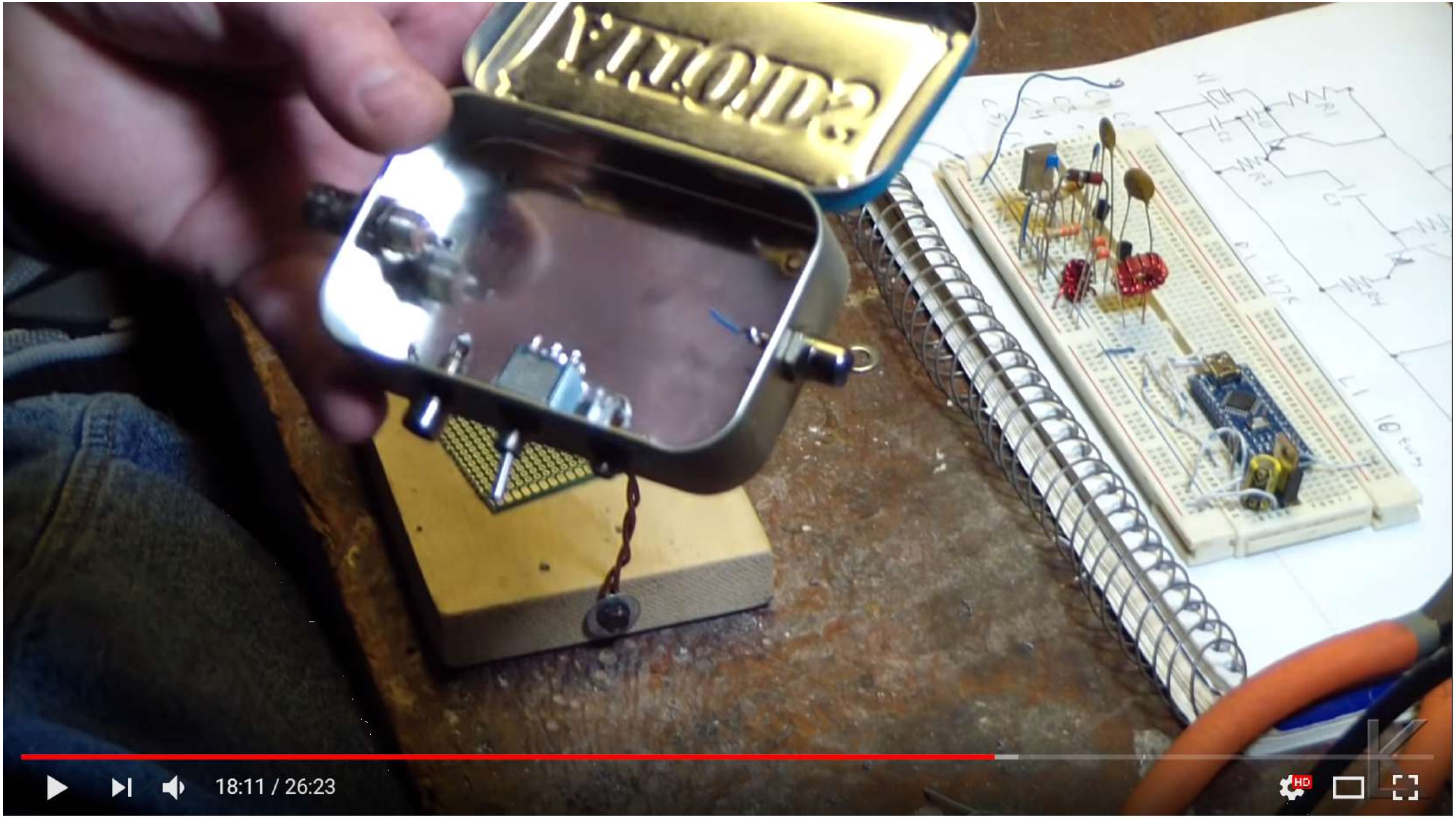
From this picture it looks like we get a reasonably steady DC output voltage given a $120V_{RMS}$ AC input voltage (note that the output is unregulated, so with no load, the DC voltage is actually higher than the rated 12V). For this 20 watt AC-DC converter, as long as the voltage ripple is meeting your specifications, there is not much more that you need to worry about. However, as mentioned earlier, there can be problems at higher powers due to the large in-rush current to the capacitor as it is recharged. These problems will be analyzed in part 2 of the rectifier investigation.

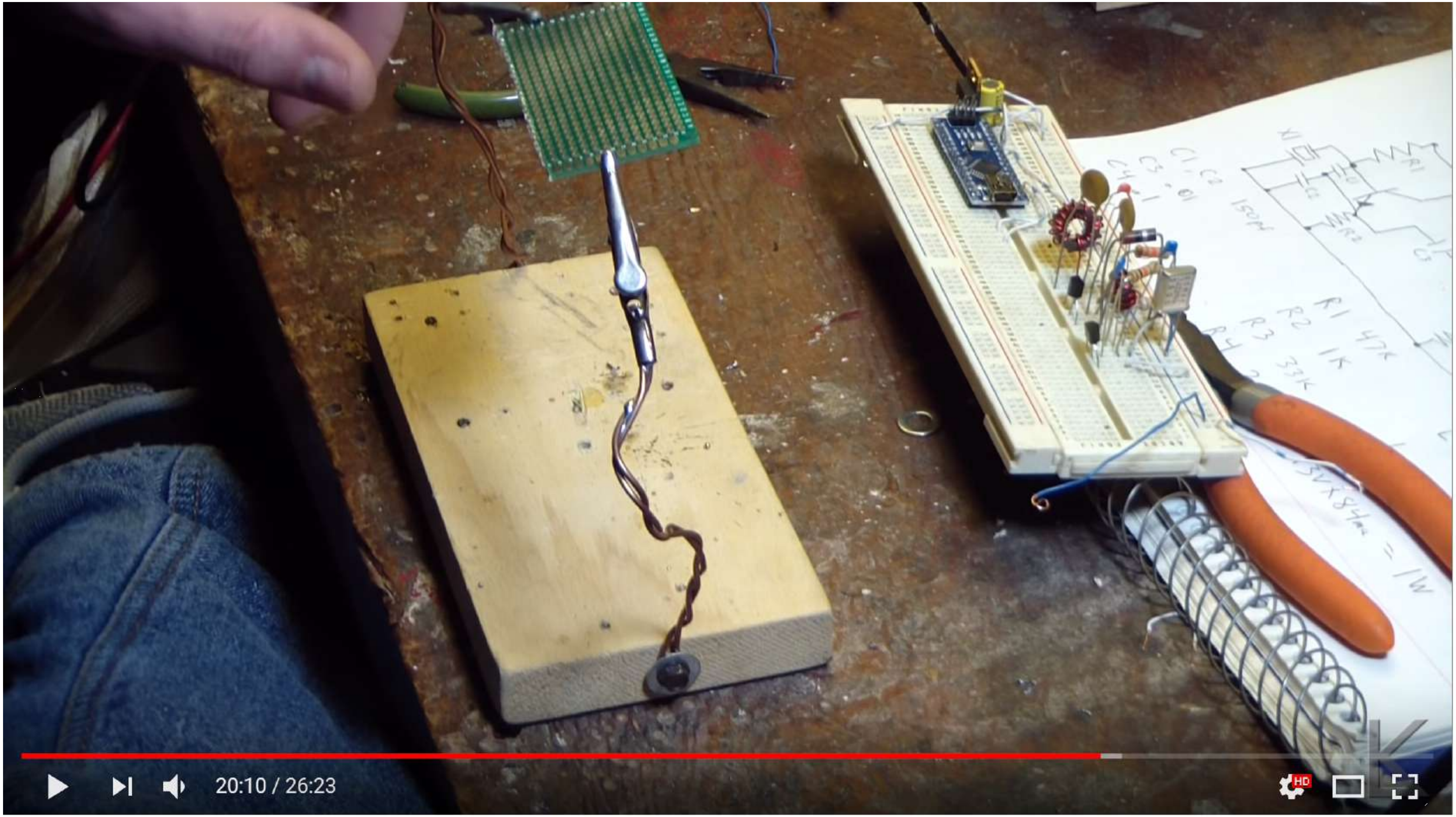


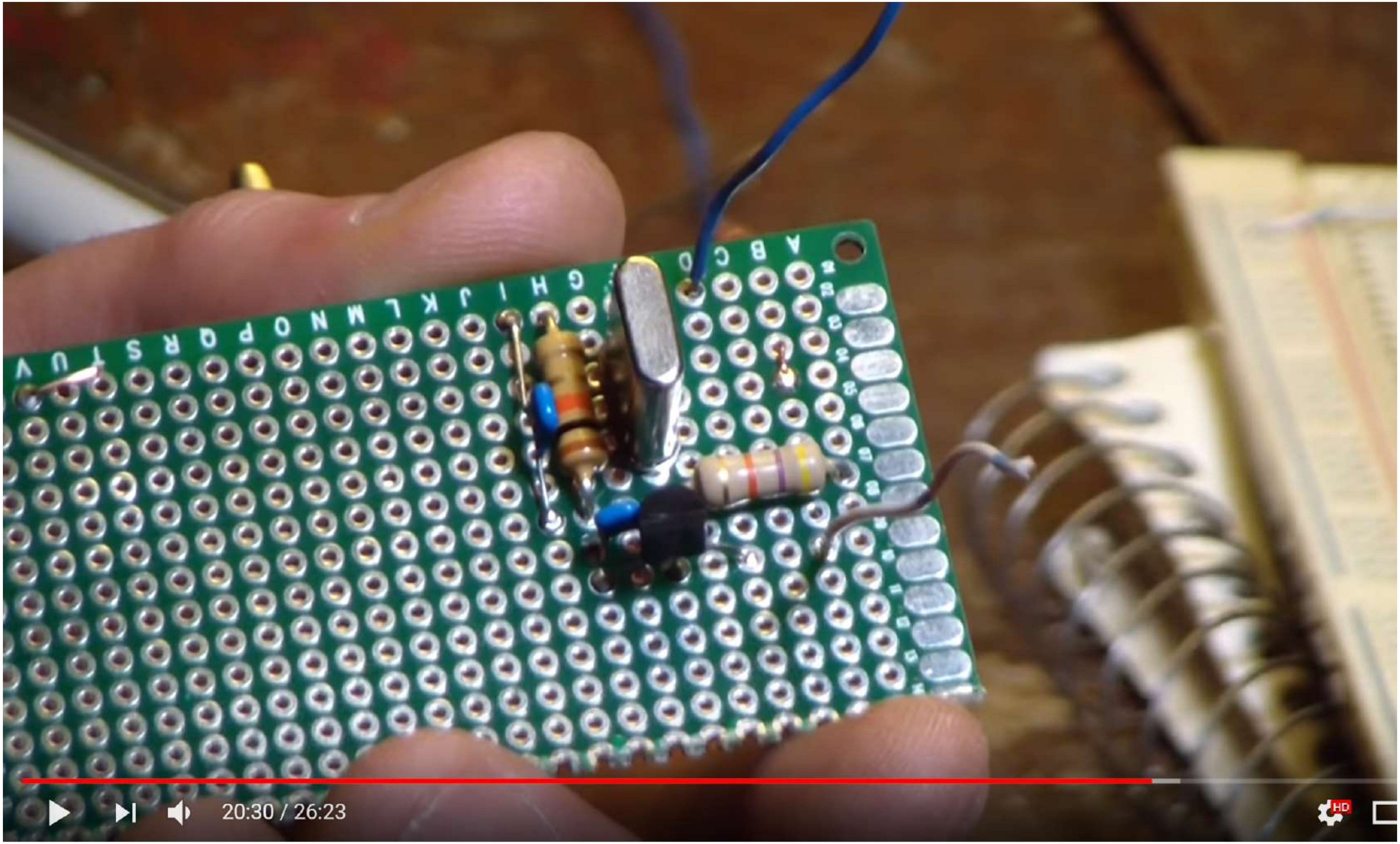
Ham Radio - Build your own QRPp CW transmitter

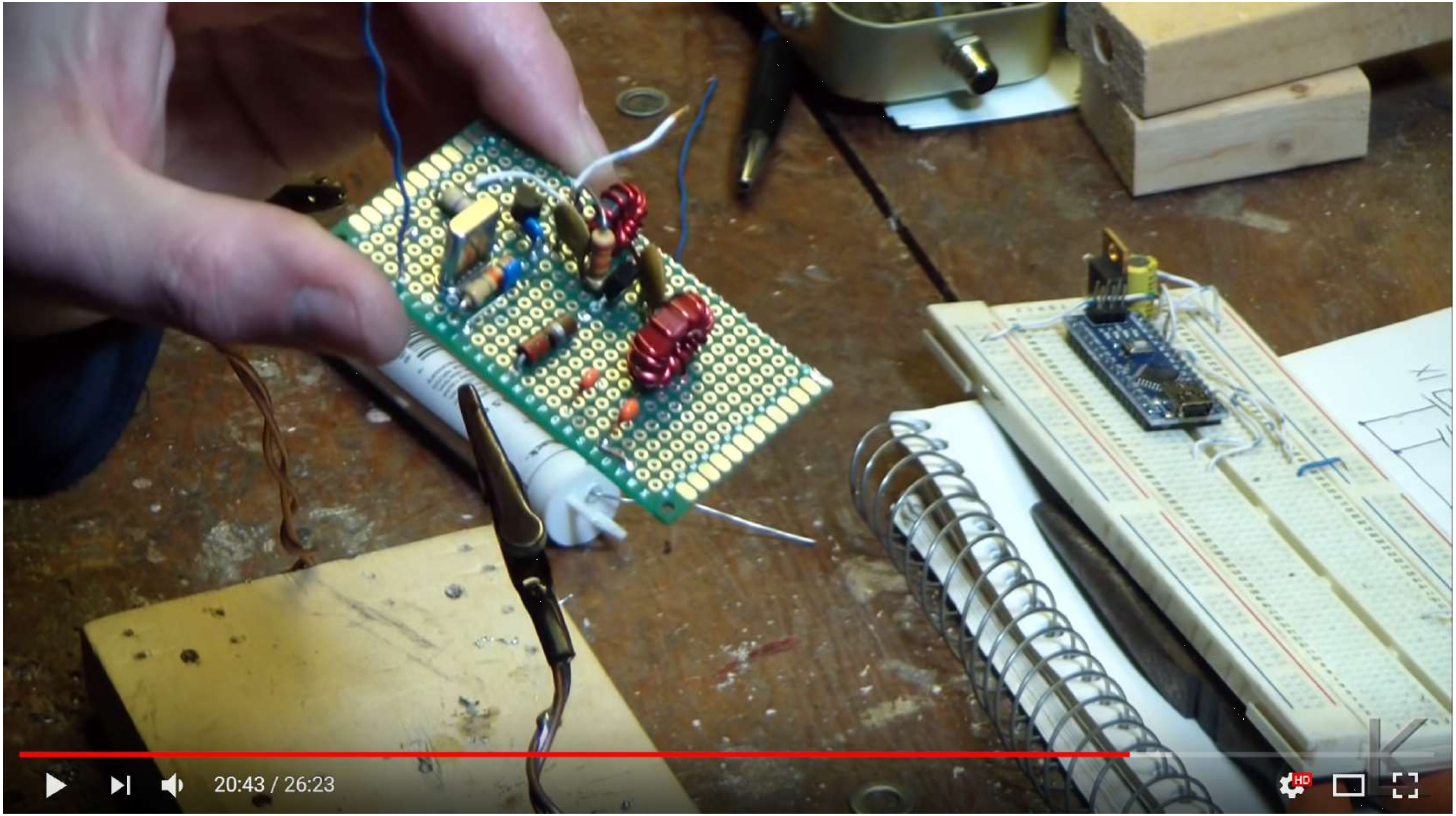

9:21 / 26:23

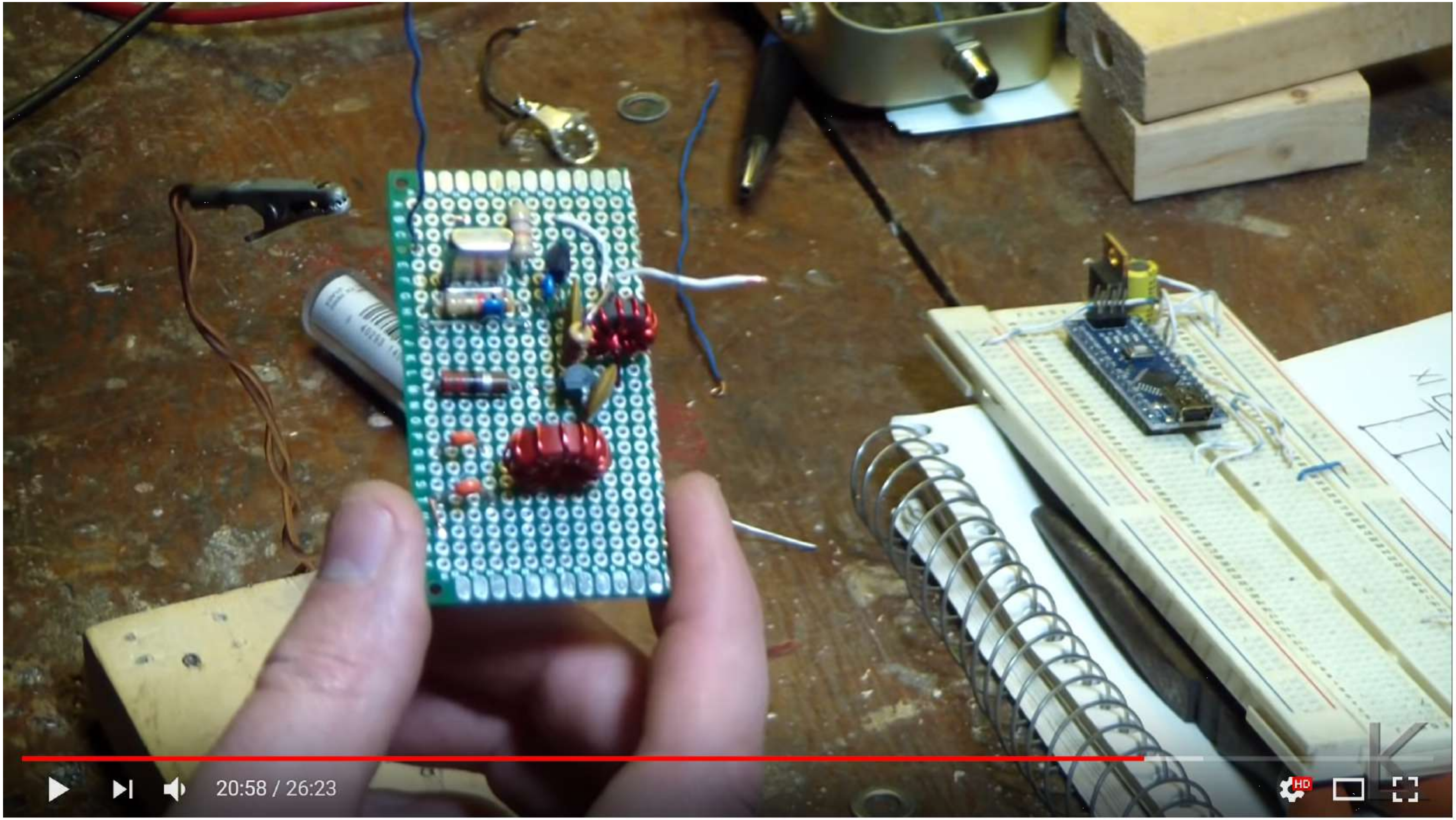

QRPp TX
+13
L1
R3
C3
R2
R1 47K
R2 1K
R3 33K
R4 22Ω
1W
14:20 / 26:23

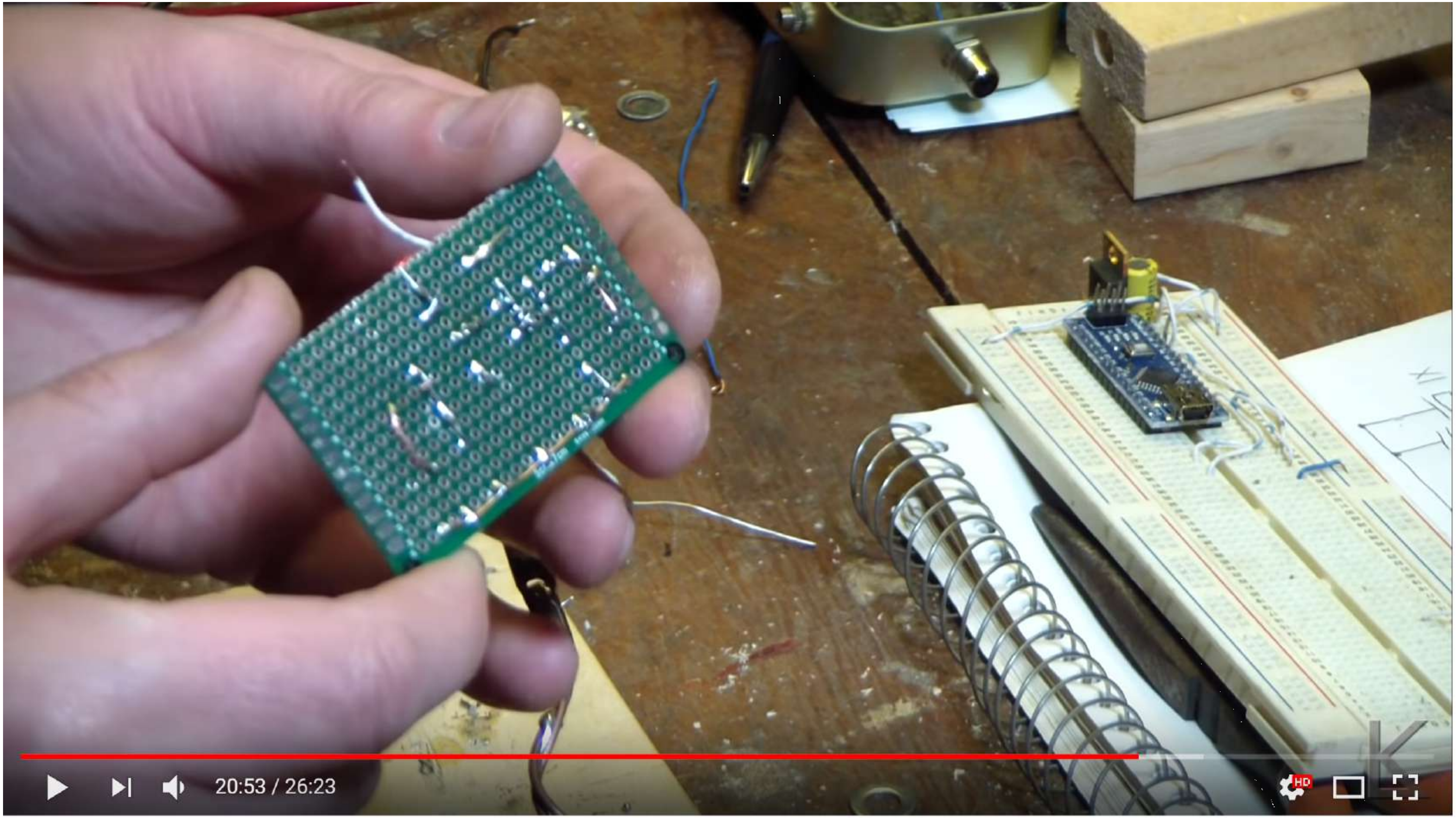

18:11 / 26:23

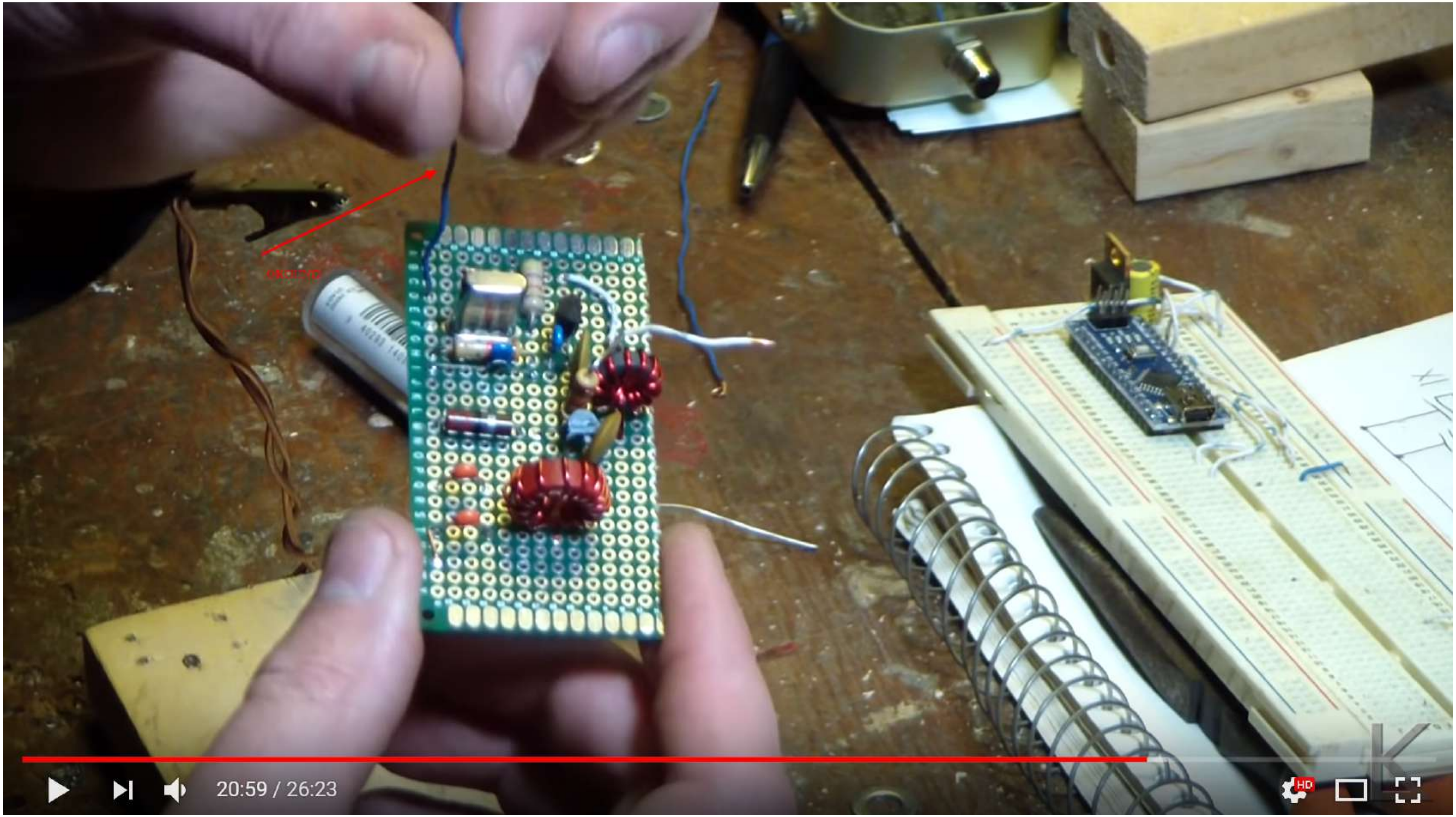

R1 47K
R2 1K
R3 33K
20:10 / 26:23
HD

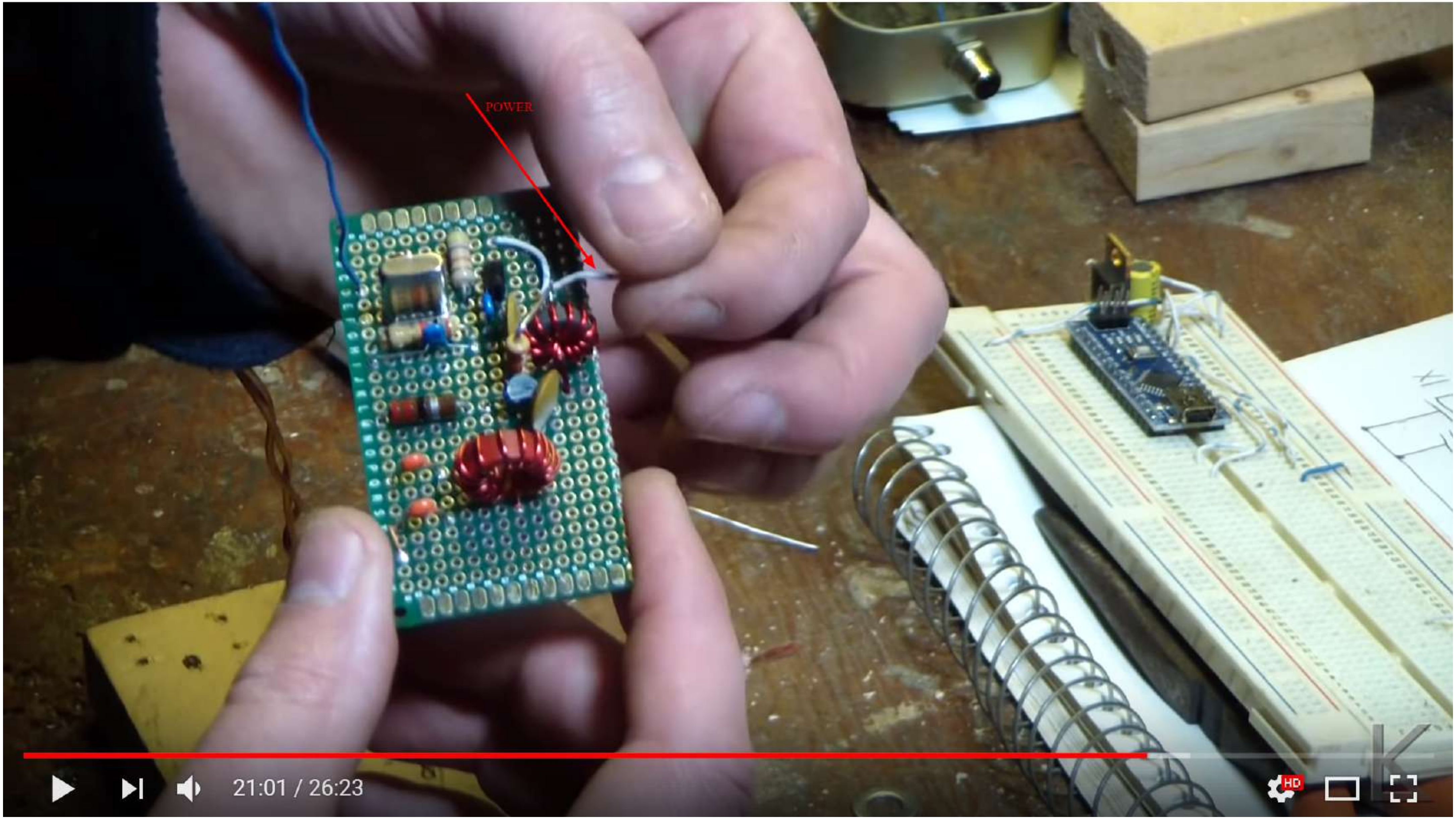

20:30 / 26:23
HD


20:43 / 26:23

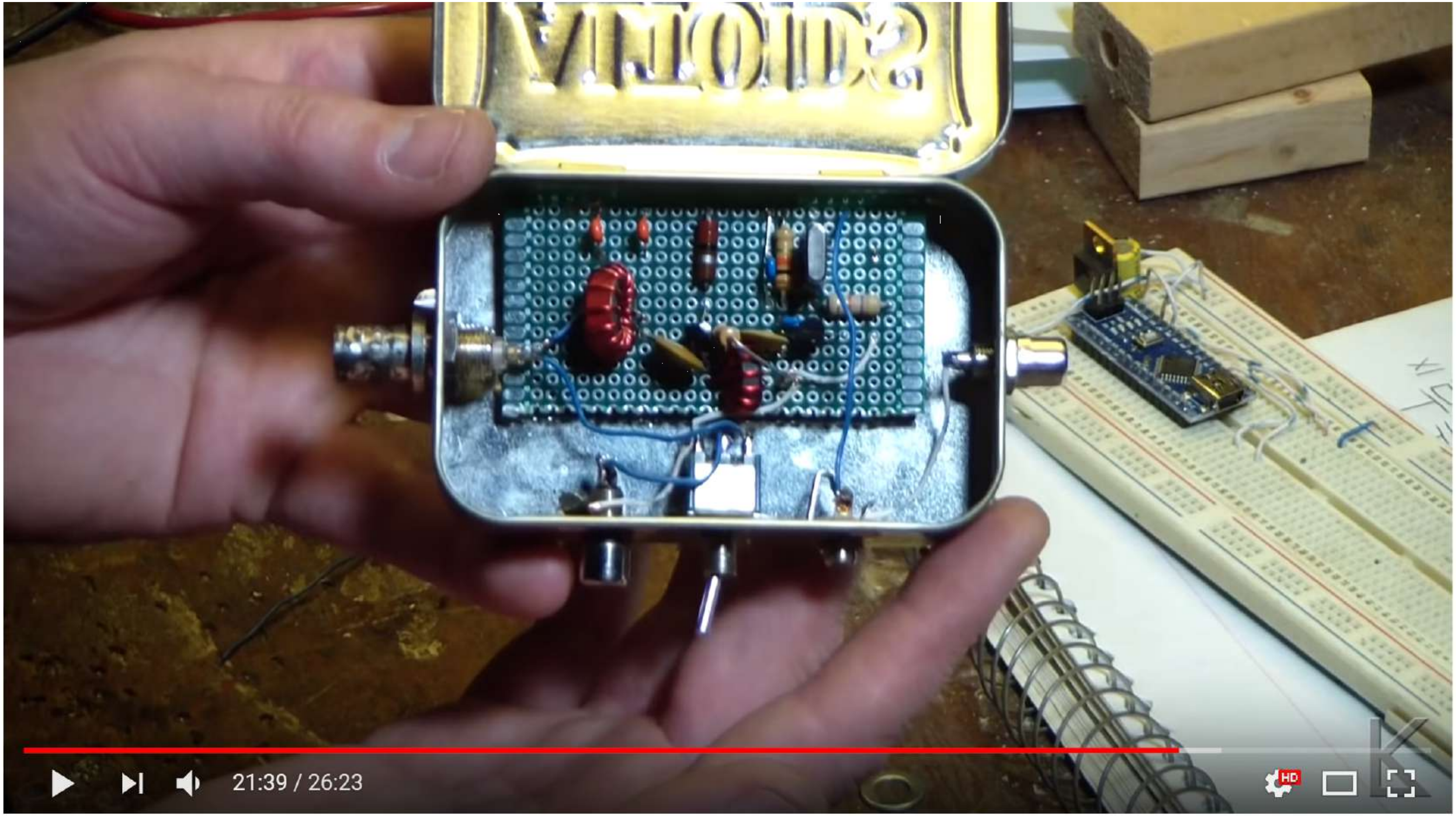

20:58 / 26:23
HD


20:53 / 26:23


20:59 / 26:23

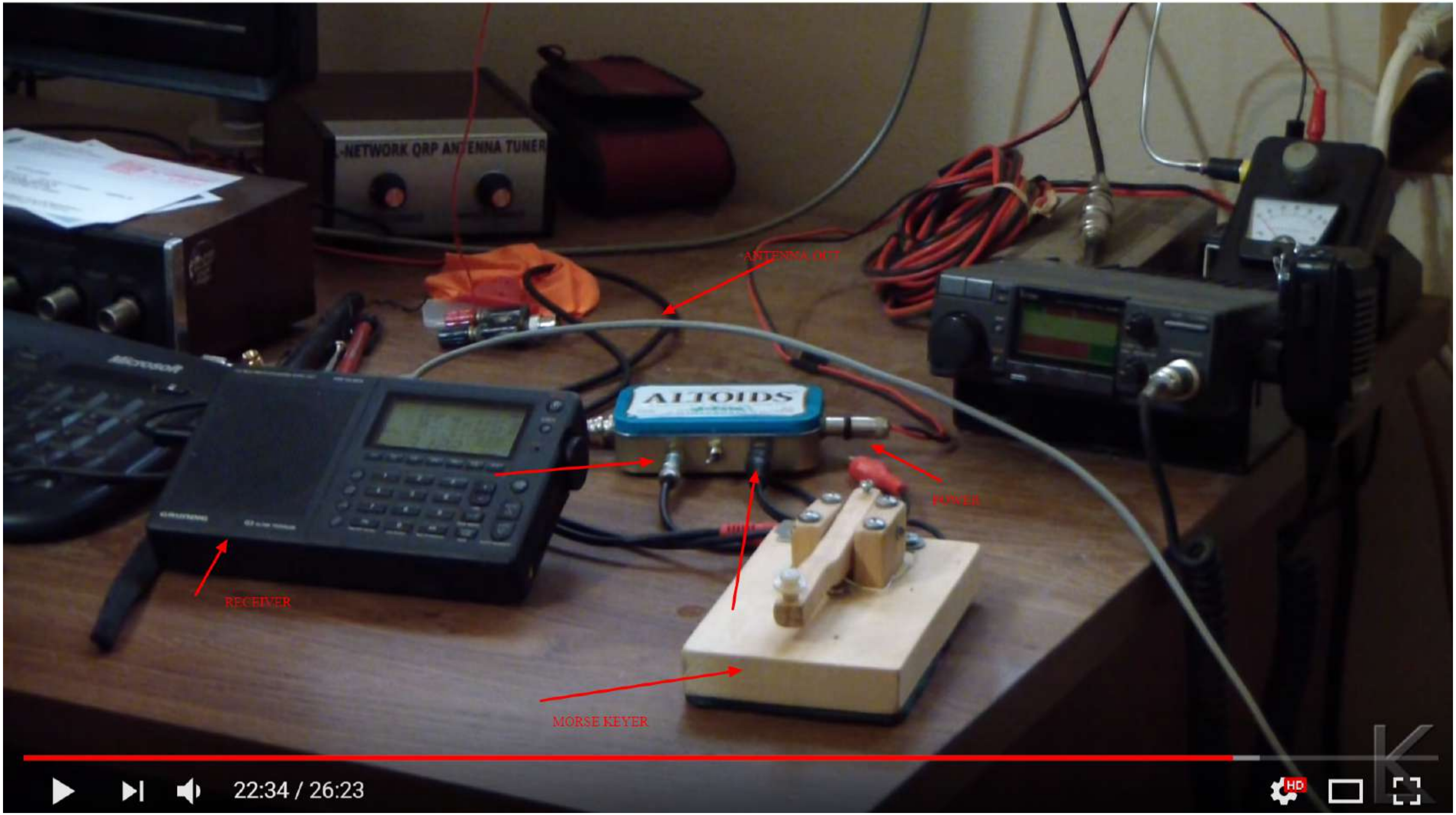

POWER
21:01 / 26:23


ANTENNA LEAD
21:35 / 26:23



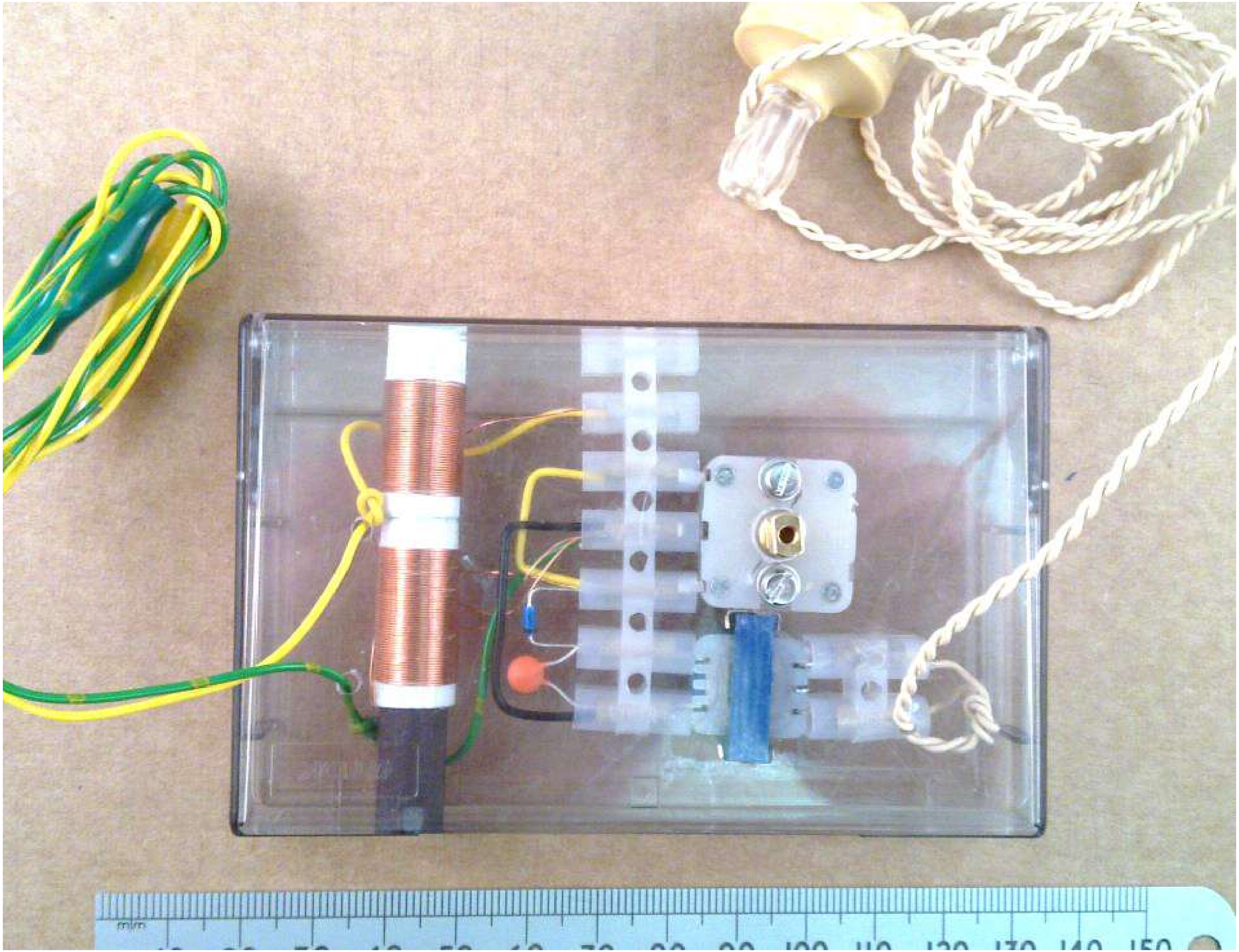
21:39 / 26:23

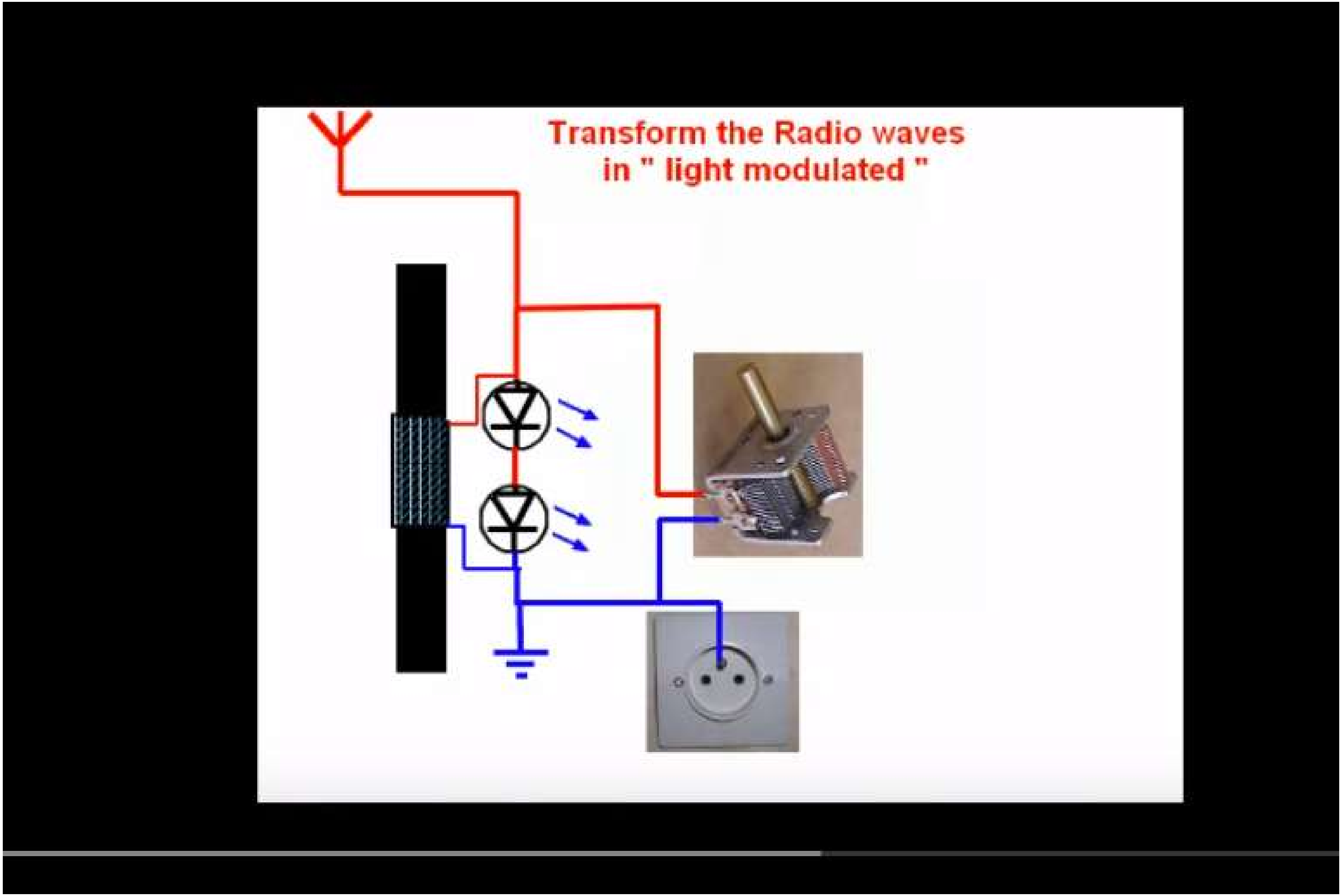

ALTOIDS
OUTPUT ANTENNA
POWER
RECEIVE ANTENNA
KEYJACK
21:34 / 26:23
HD



L-NETWORK QRP ANTENNA TUNER
ANTENNA OUT
ALTOIDS
POWER
RECEIVER
MORSE KEYER
22:34 / 26:23

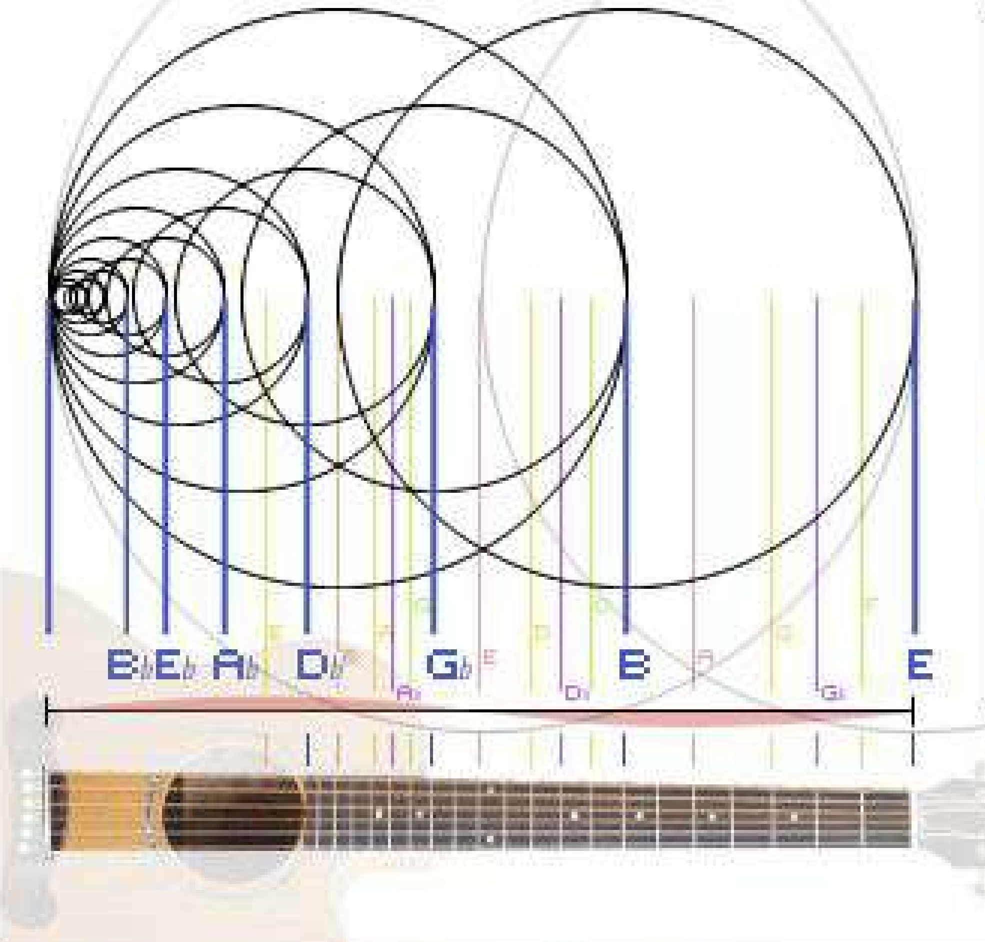

OSCILLATOR 7.1225 MEGAHERTZ
ALTOIDS
146.910
TUNED TO 7.1225 MEGAHERTZ
23:59 / 26:23
HD




Transform the Radio waves
in " light modulated "

THE CHROMATIC (TWELVE TONE) MUSICAL SCALE - THE CIRCLE OF FIFTHS

G♭ B E A D G C F B♭ E♭ A♭ D♭ G♭ B

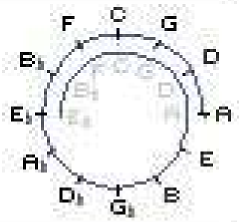


IF YOU PLUCK A TENSIONED STRING HALFWAY BETWEEN THE END POINTS OF ANY GIVEN TONE, YOU WILL GET THAT SAME TONE, ONE OCTAVE HIGHER.

SHOWN TO THE LEFT:

- BASE TONE
- 1/2 (+1 OCTAVE)
- 1/4 (+2 OCTAVES)
- 1/8 (+3 OCTAVES)
- X2 (-1 OCTAVE)

THE CONDENSED FRET-BOARD IS CREATED BY THE BASE TONES, PLUS OCTAVING (HALFING OR DOUBLING THE LENGTHS)



SOME INTERESTING GEOMETRIC THINGS TO NOTE:

IT DOESN'T MATTER WHAT NOTE OF THE CIRCLE OF FIFTHS YOU START ON... FOR THIS EXAMPLE I CHOSE TO MAKE THE BASE TONE 'E' FOR COMPARISON WITH GUITAR

THE OCTAVE ABOVE IS 'E' WHICH IS EXACTLY 1/2 THE LENGTH OF THE TONIC.
THE FIFTH ABOVE IS 'B' WHICH IS EXACTLY 2/3 THE LENGTH OF THE TONIC.
THE FOURTH ABOVE IS 'A' WHICH IS EXACTLY 3/4 THE LENGTH OF THE TONIC.
THE THIRD ABOVE IS 'A FLAT' WHICH IS EXACTLY 4/5 THE LENGTH OF THE TONIC.

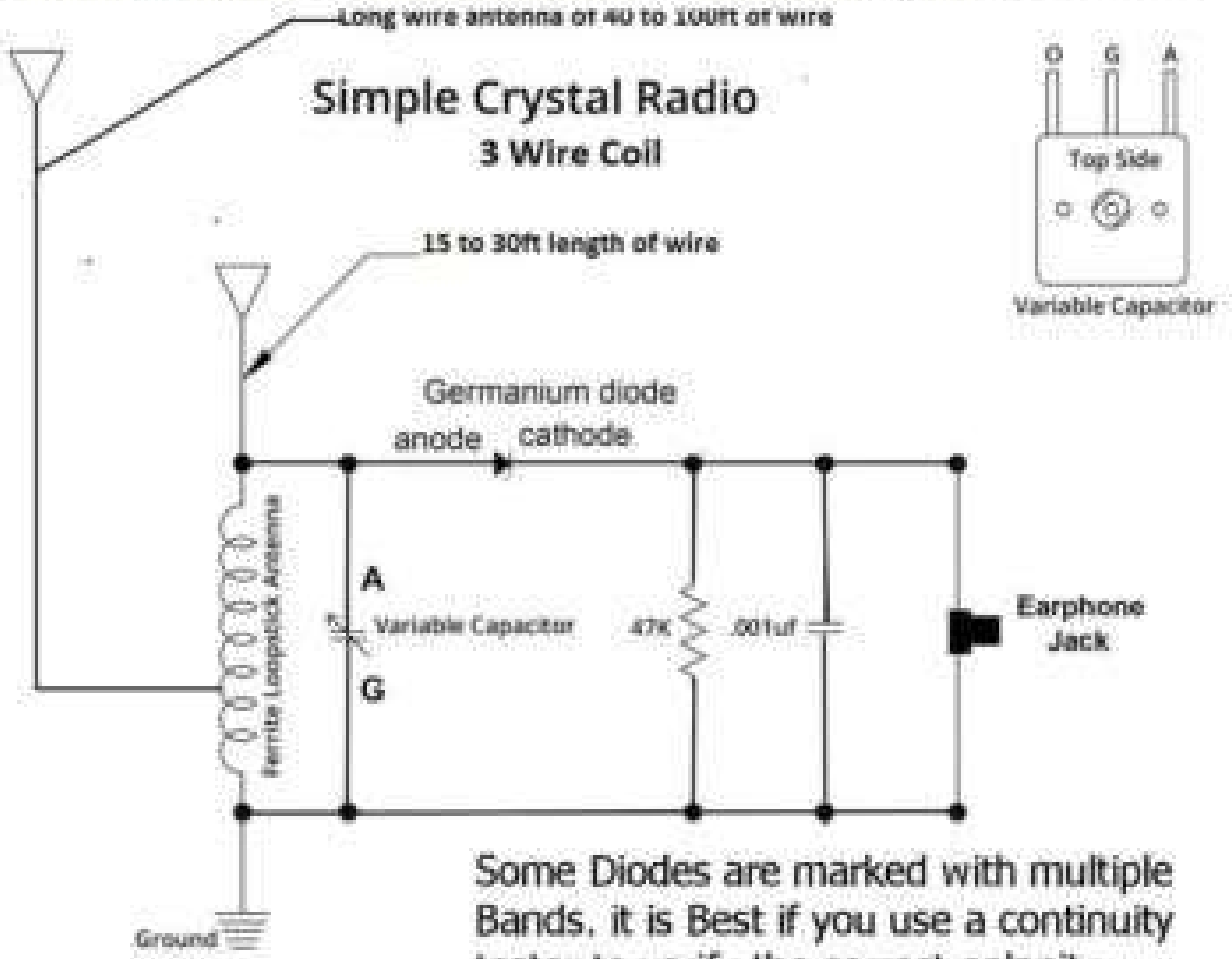
THESE TONES ARE THE MOST CONSONANT (MOST HARMONIC) WITH THE TONIC 'E' AND ARE ALSO THE PLACES ON THE GUITAR WHERE PLAYING 'HARMONICS' WORKS BEST.

THE TONES / DISTANCES IN THE CHROMATIC SCALE FALL ON INTERSECTION POINTS OF THE EXPANDING VESICA PISCES CIRCLE FORMATIONS.


1.RF radio frequency
2.Seven led photon lights
3.Sonic & Vibrations
4. Face Lift skin tighten
5. Skin rejuvenation
Purple Light (590nm-600nm)
Detoxification ,make the skin more healthy

Our GI Receiver

You should only use either a long or a short antenna, but not both.



Some Diodes are marked with multiple Bands. it is Best if you use a continuity tester to verify the correct polarity. Maximum volume will be acheived if the diode is Oriented correctly AS SHOWN IN THE DIAGRAM.

Parts List
1 - Ferrite Loopstick Antenna
1 - Variable Capacitor
1 - Germanium Diode
1 - .001uf Capacitor
1 - 47K Resistor
1 - 20 Million Ohm Ceramic Earphone
Antenna and Ground wire not include with parts

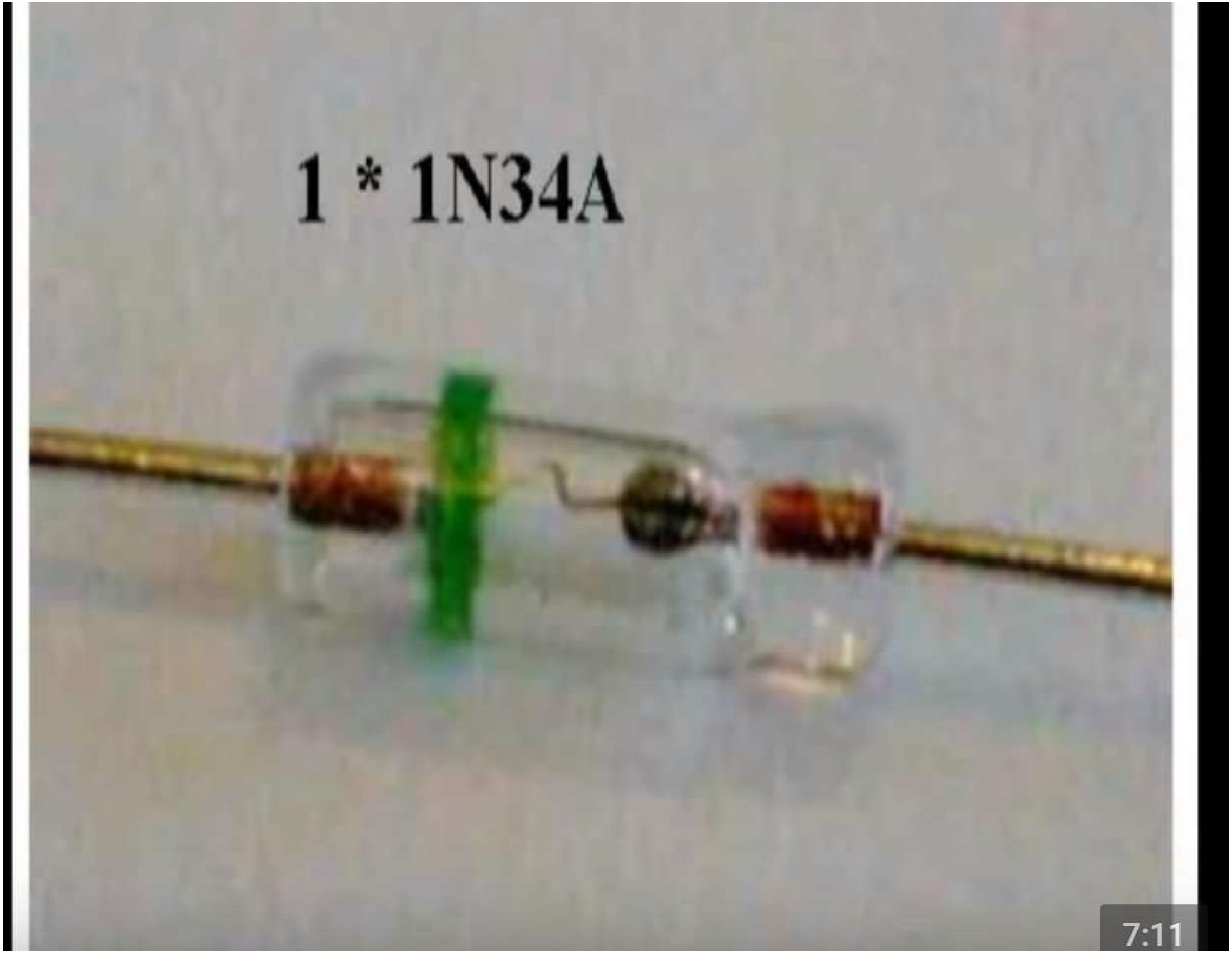
If you have a kit with a 3 wire coil.
Many users have reported that cuting the connection between the diode and antenna, and moving the anode to the center tap of the coil improved performce significantly.
In addition sliding the coil over to one end of the core may help too.

For short antenna connect a 15 to 30ft length of wire. It is best to use a long wire antenna of 40 to 100ft. A good ground may be required if so run a wire for ground to the nearest ground source. If you are not using the long antenna connection do not cut off the center coil wire. Doing so will cause the coil not to work.

47K Ohm Resistor

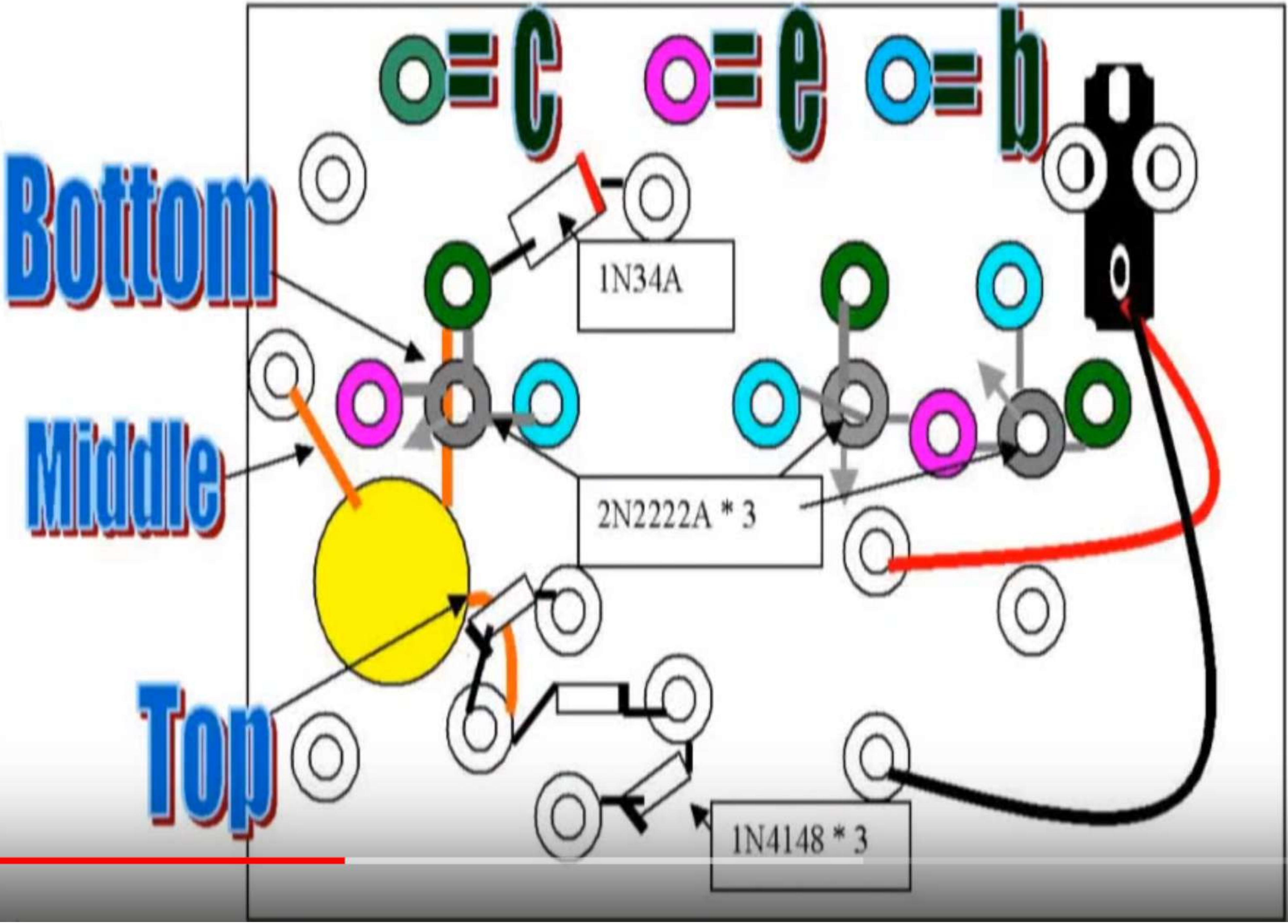
Making a Shortwave Radio (How to make a Shortwave Radio)

3 * 1N4148

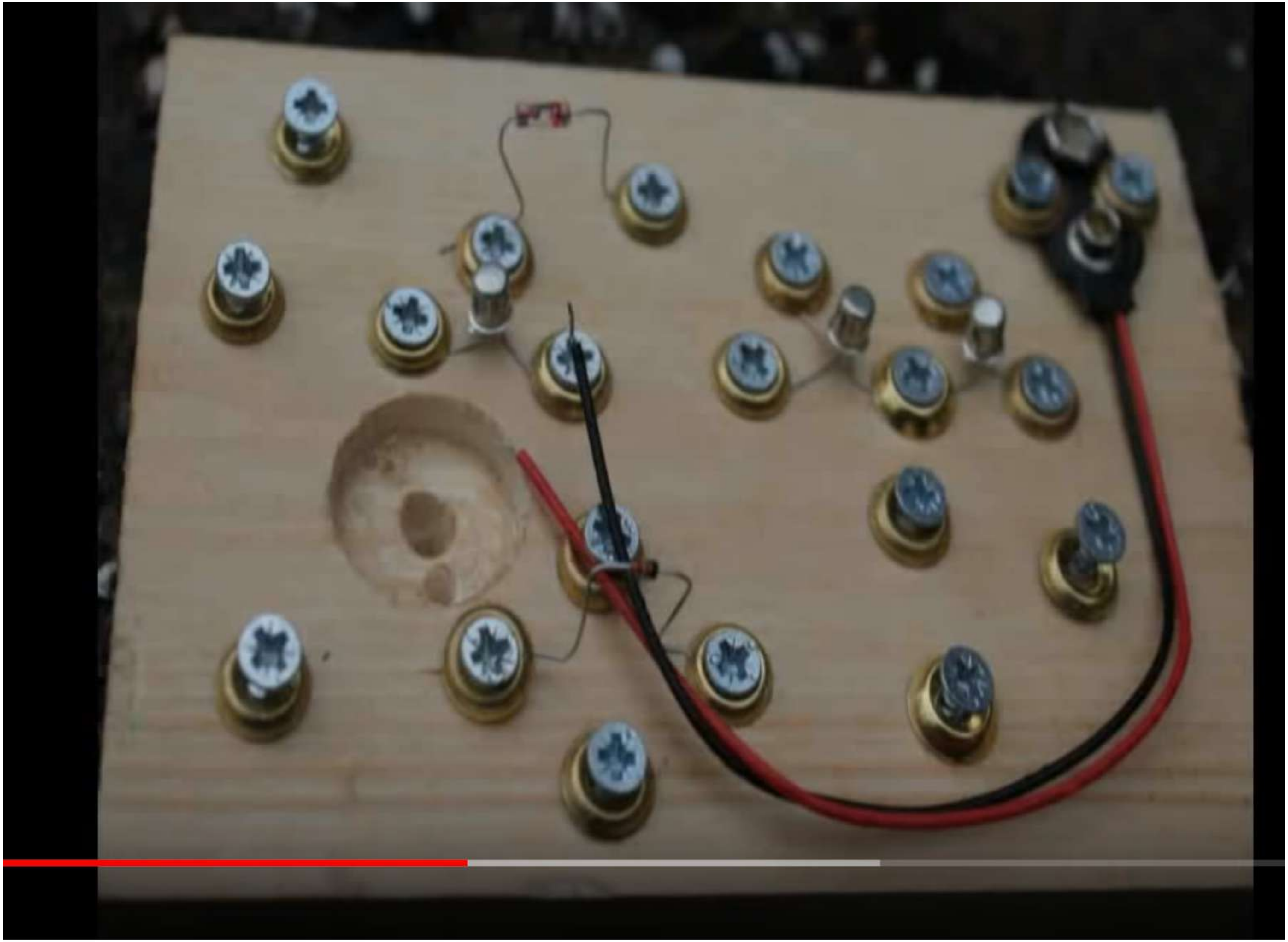

1 * 1N34A
7:11

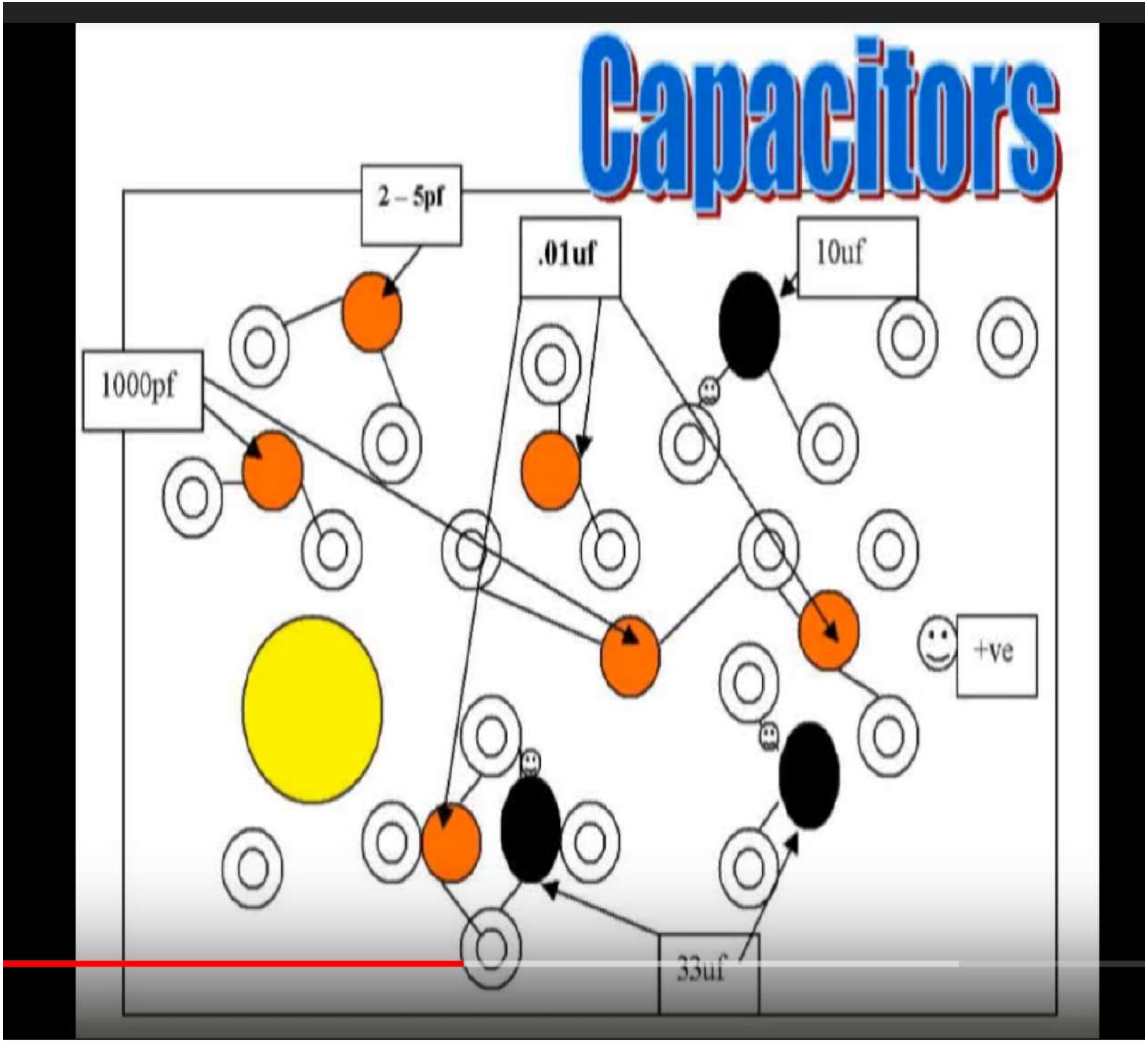

3 * 2N2222a
6:57

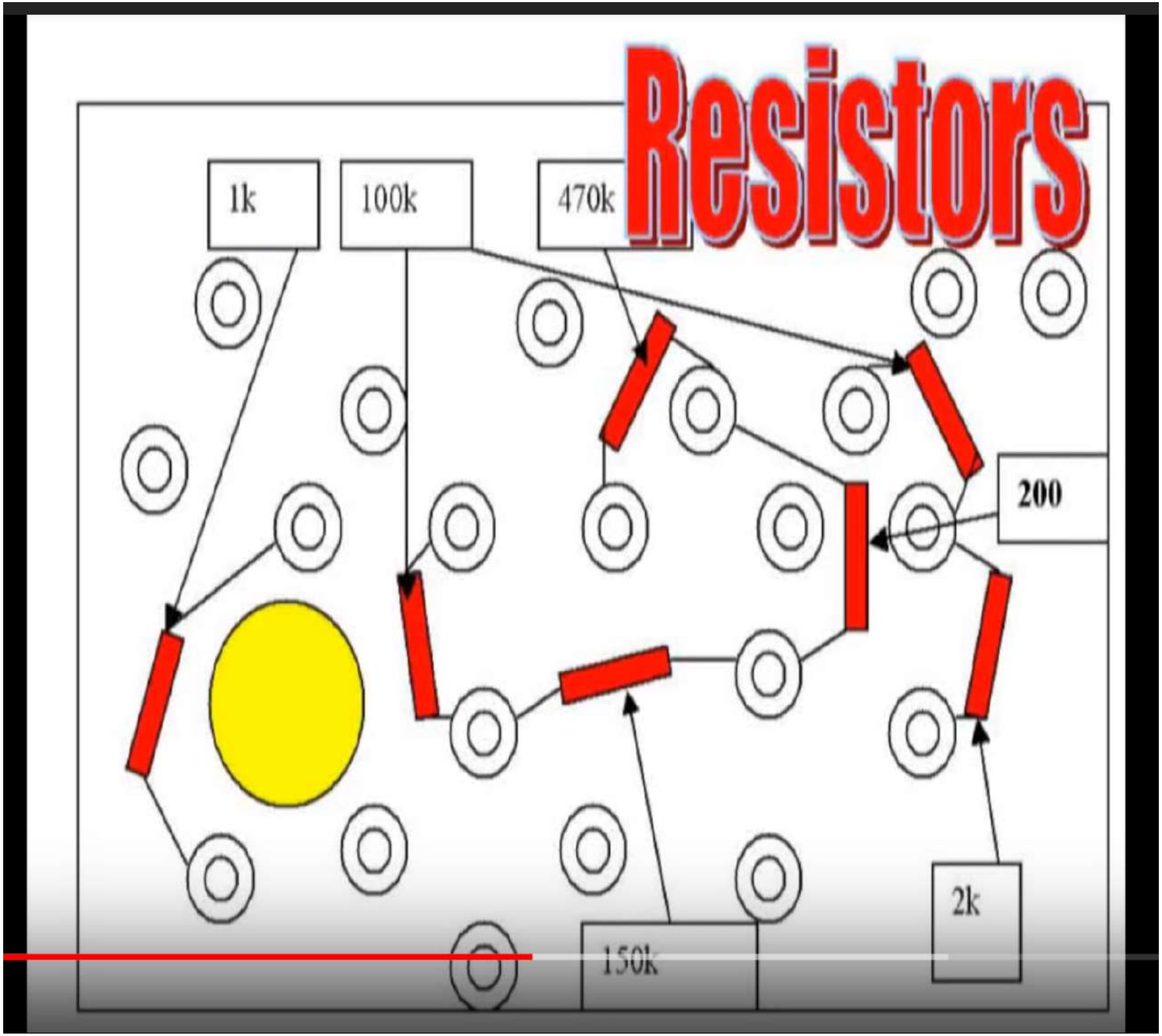

middle 2n2222a has
base bent
backwards



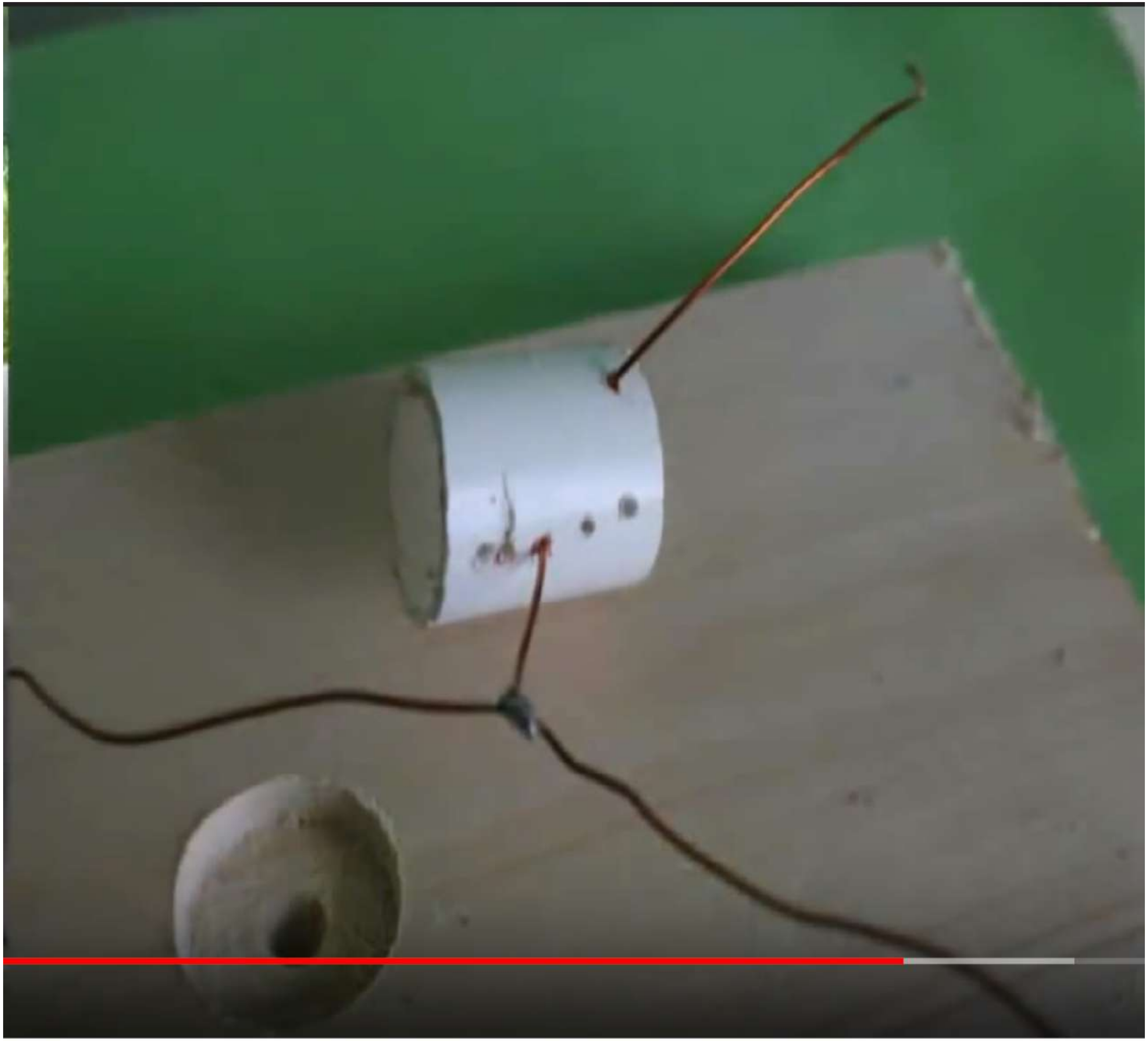
= c
= e
= b
Bottom
Middle
Top
1N34A
2N2222A * 3
1N4148 * 3

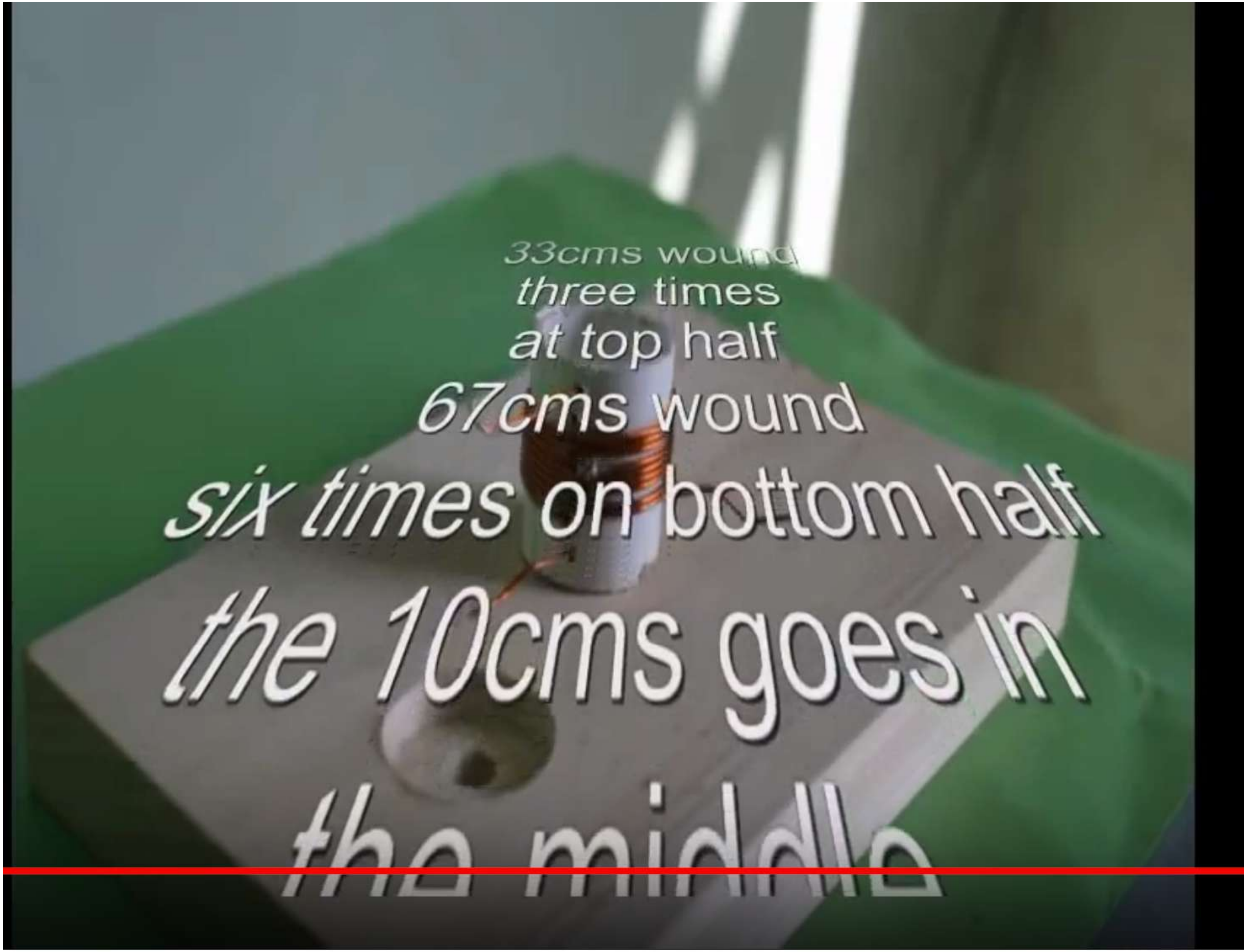



Capacitors
2 – 5pf
.01uf
10uf
1000pf
+ve
33uf



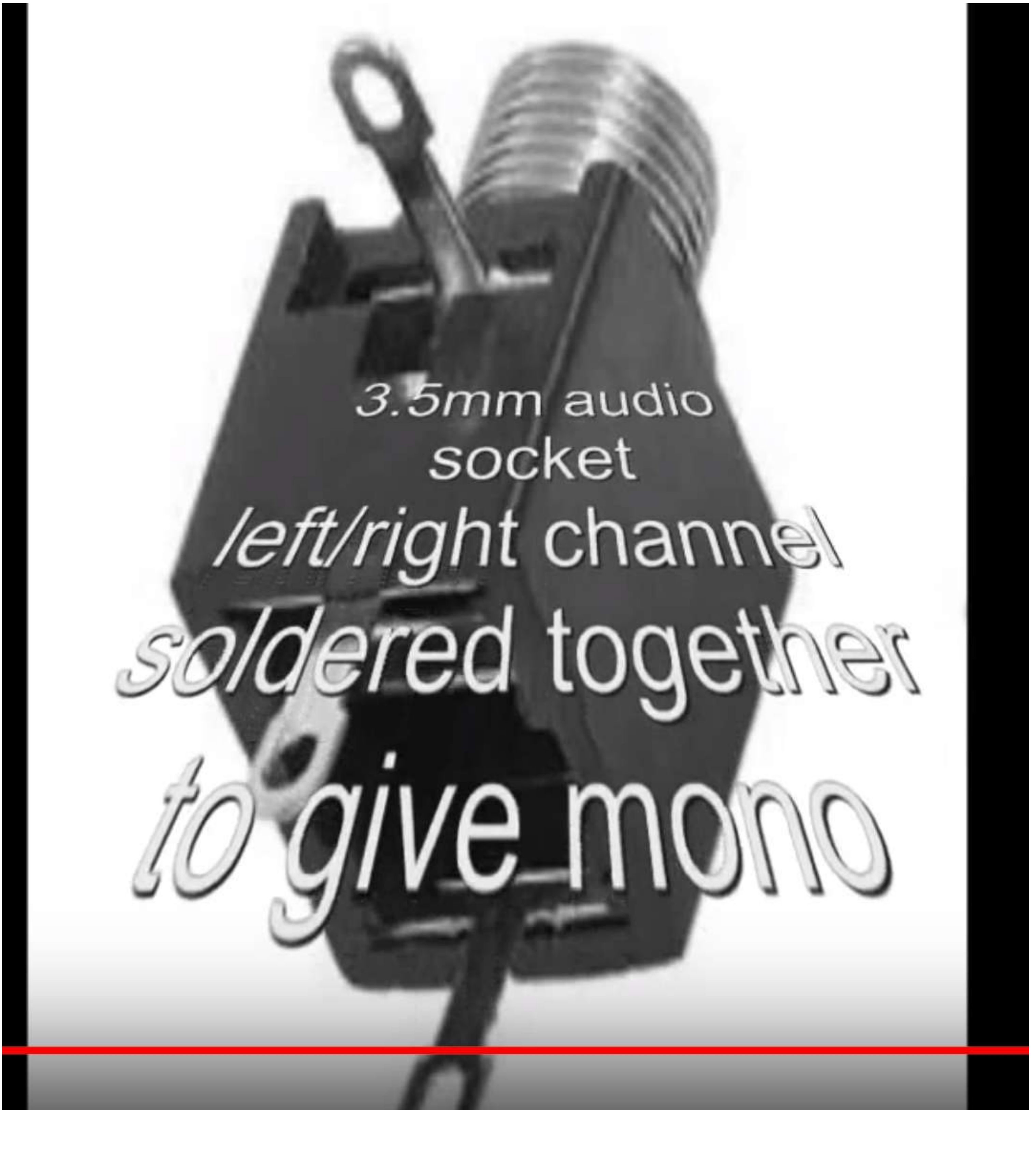
Resistors
1k
100k
470k
200
2k
150k

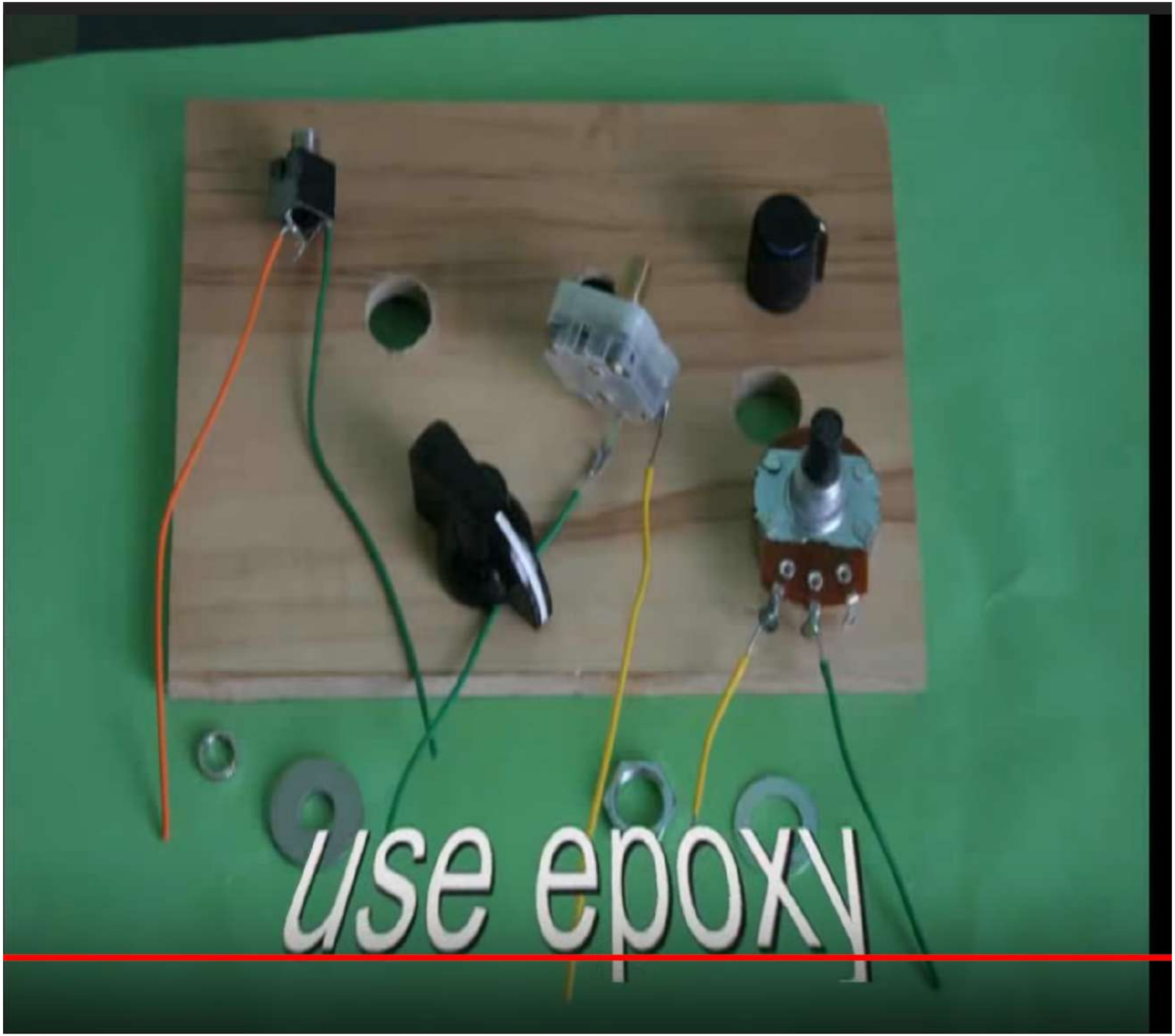


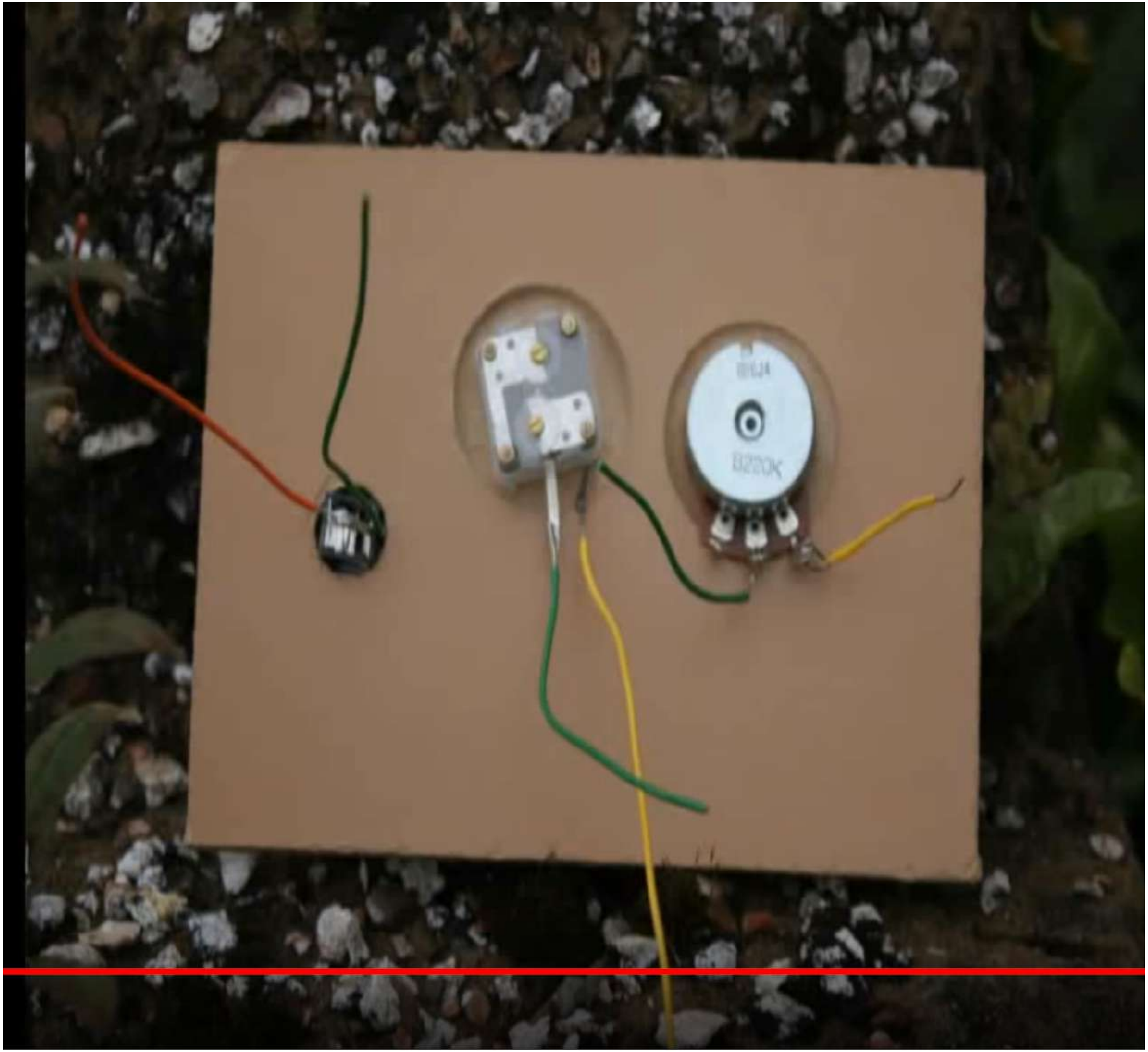

33cms wound
three times
at top half
67cms wound
six times on bottom half
the 10cms goes in
the middle

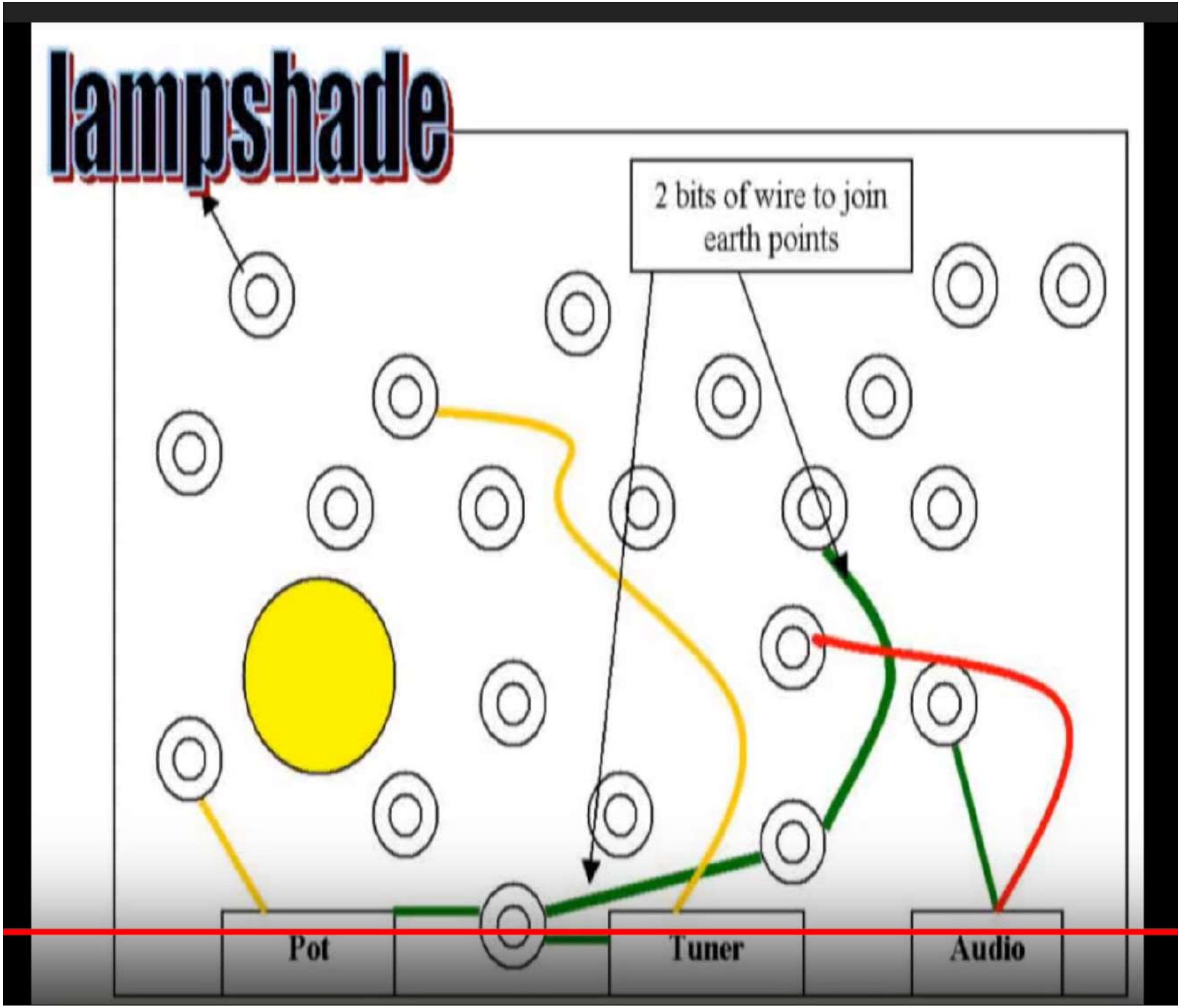

Rapidonline.com
minature tuning
capacitor 50v

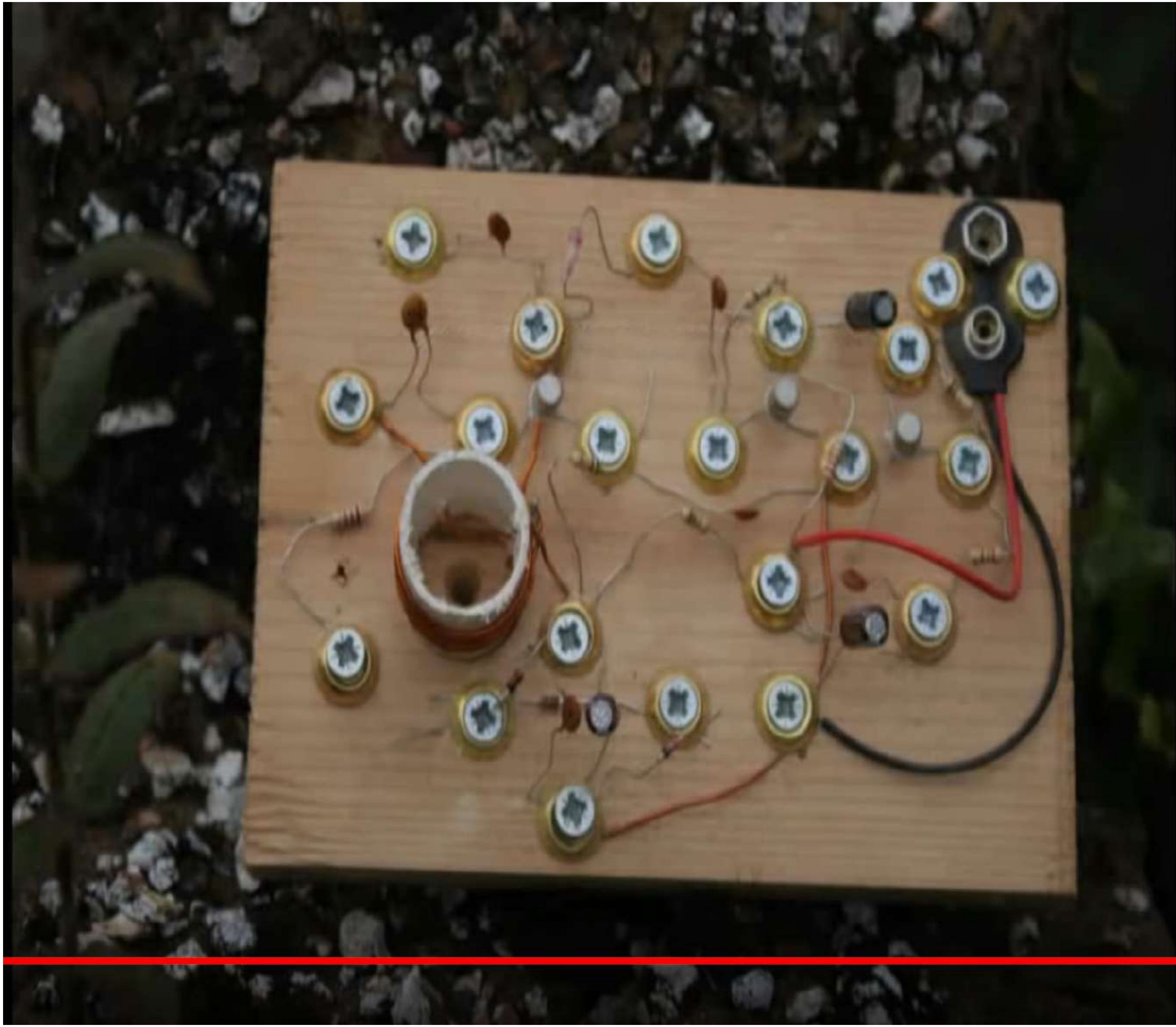

220k
potentiometer

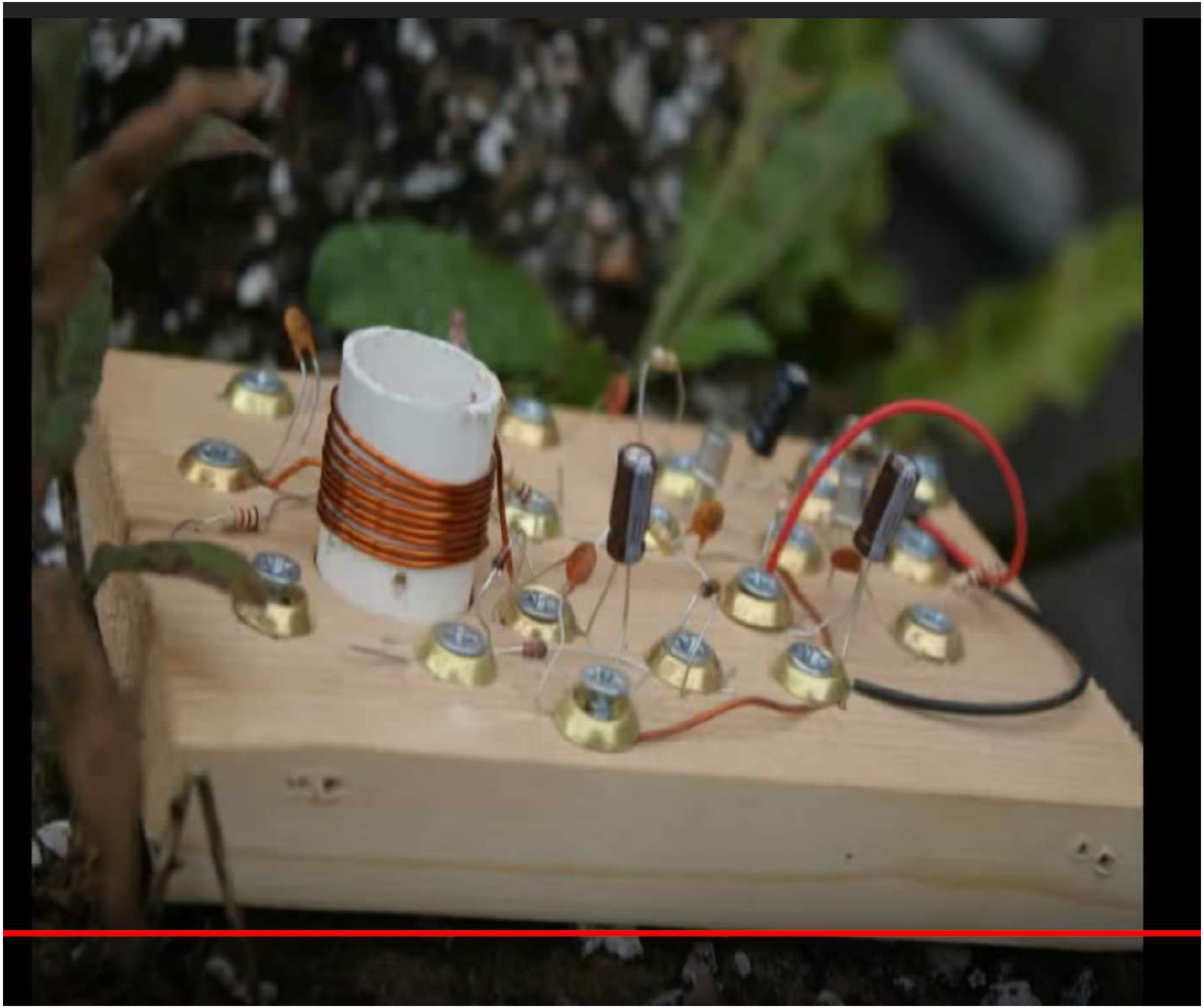

3.5mm audio
socket
left/right channel
soldered together
to give mono

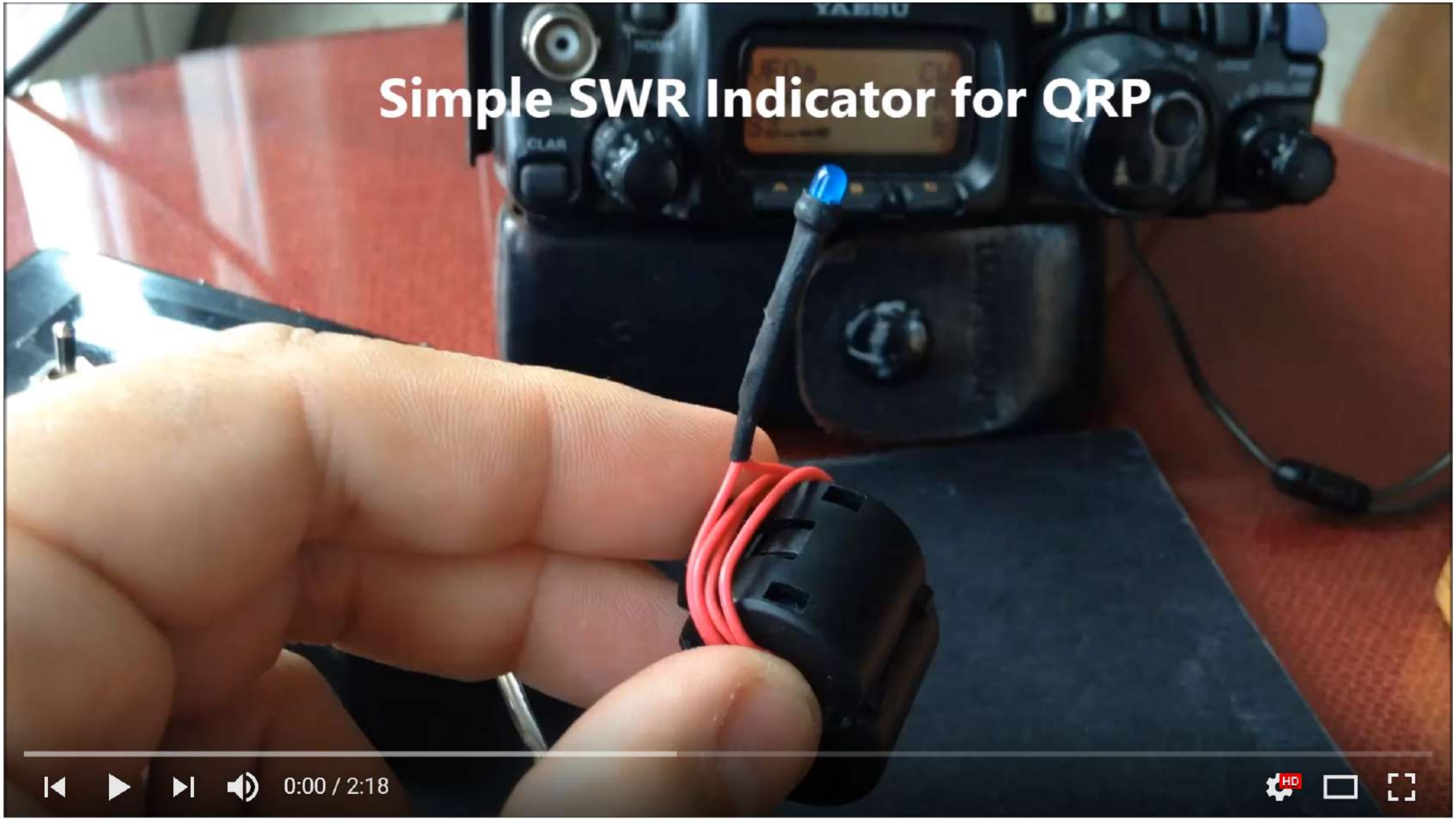

use epoxy


B220K


lampshade
2 bits of wire to join earth points
Pot
Tuner
Audio







Simple SWR Indicator for QRP

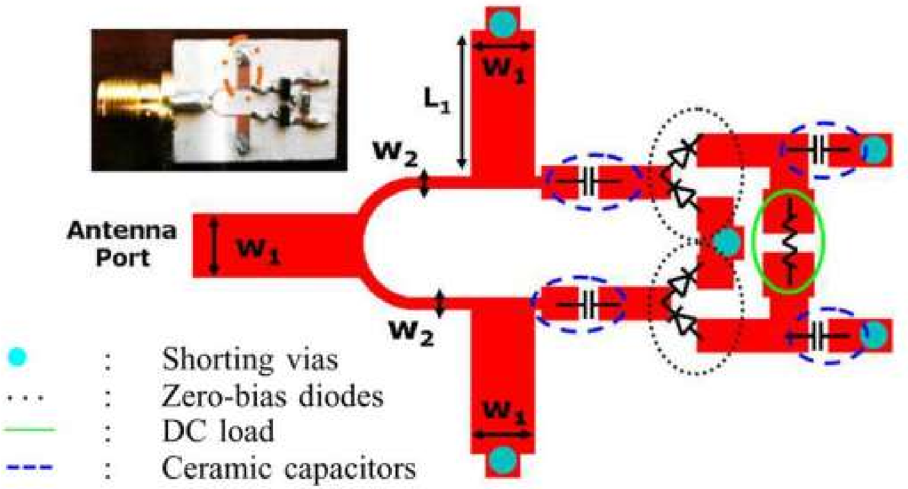


Fig. 3. Layout of the rectifier prototype, printed on RO3206. $w_1 = 72$ mil, $w_2 = 15$ mil, and $L_1 = 171$ mil. Fabricated sample is shown in top left, and the impedance matching stub is encircled.

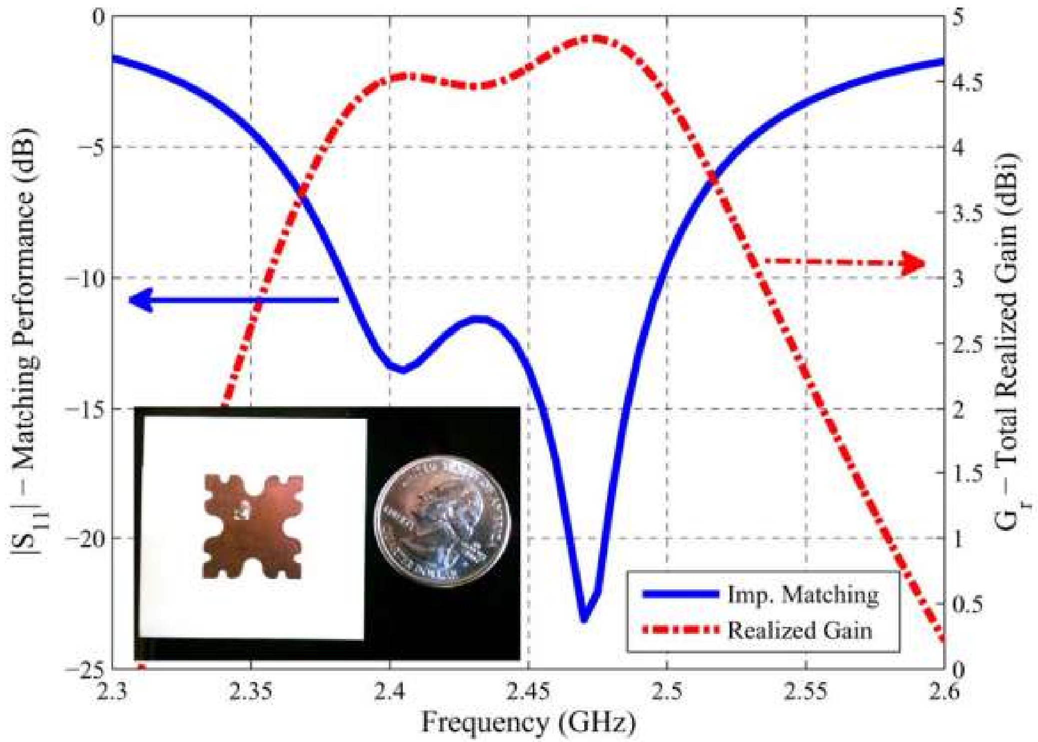
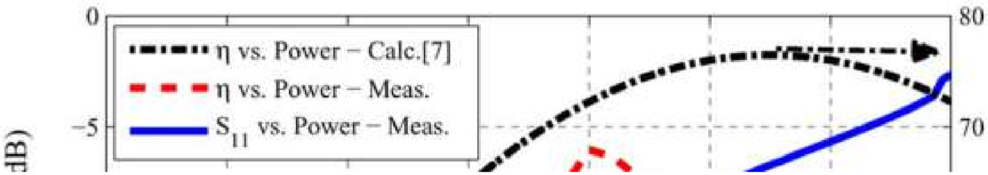
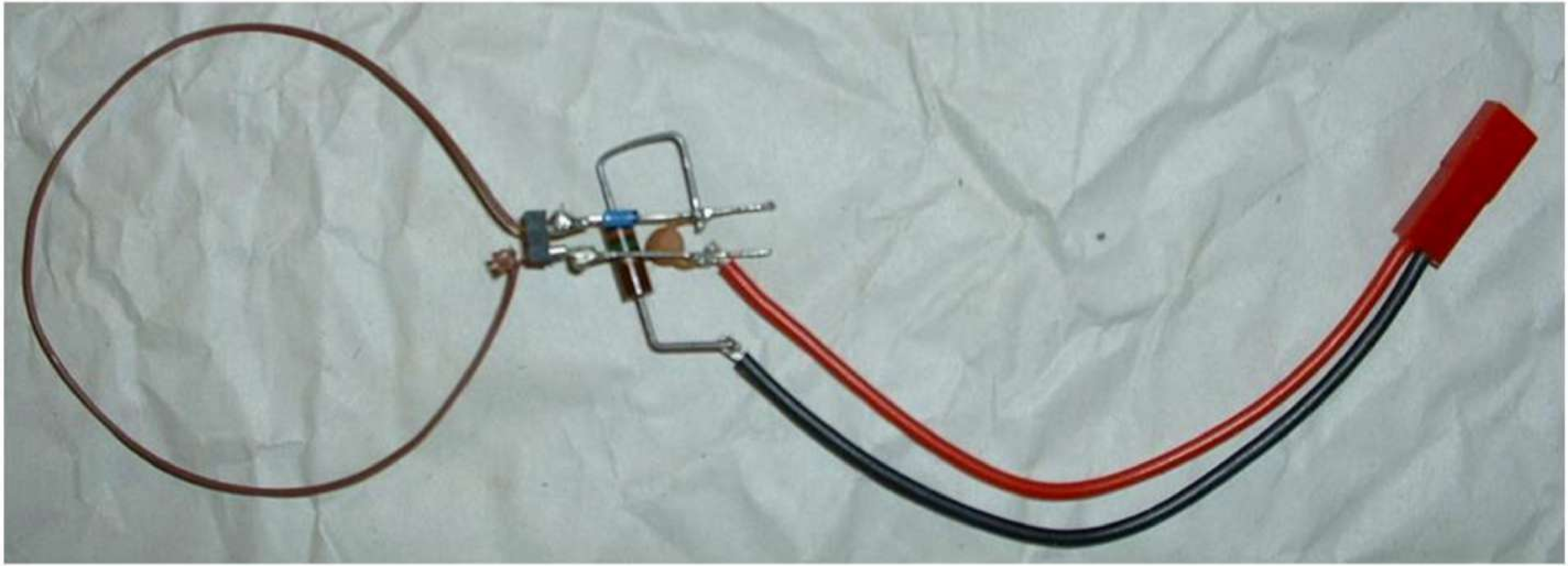
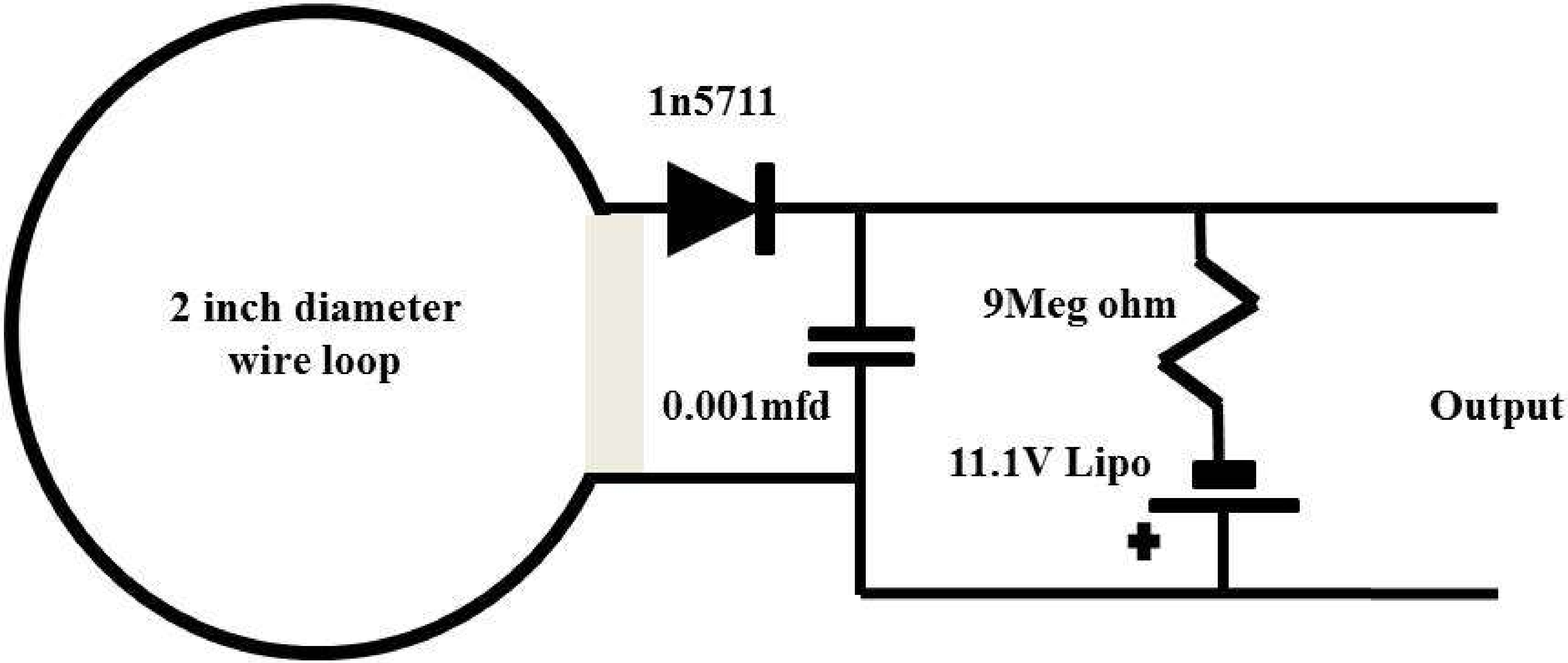


Fig. 5. Measured $|S_{11}|$ performance and total realized gain (at boresight) of the proposed antenna. Fabricated sample is shown in bottom left.

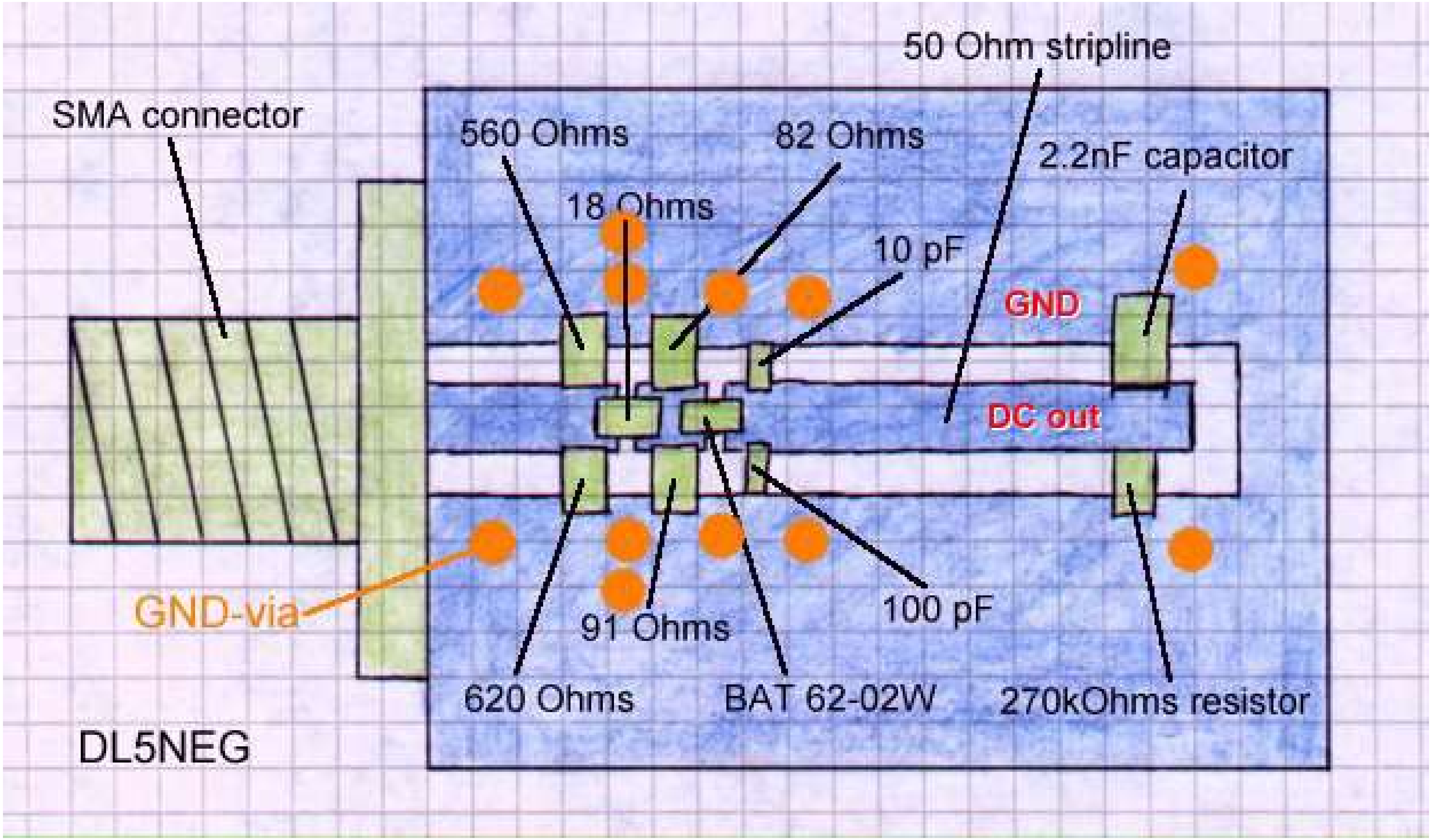






A more sensitive rf field strength meter (especially for 2.4Ghz)
by Flying-llama (extending dave1993's design)

WARNING: Output can range from about negative 0.15V (little or no signal detected) to positive volts (large signal detected)


50 Ohm stripline
SMA connector
560 Ohms
82 Ohms
2.2nF capacitor
18 Ohms
10 pF
GND
DC out
GND-via
91 Ohms
100 pF
620 Ohms
BAT 62-02W
270kOhms resistor
DL5NEG

AN RF AMMETER

James Brett G0TFP says that by looking back to the time when 'Aerial current' was used as the indicator for antenna system efficiency, instead of an s.w.r. meter, you could improve your station.

There was a time, before coaxial cable feeder was generally used in Radio Amateur stations, when output power and general antenna system efficiency were gauged by the amount of r.f. current flowing in the antenna circuitry.

In the early days of radio 'aerial current' was an important measurement to be observed. Just look at Second World War military equipment, the ammeter used for this purpose was often an hot wire type, with the antenna system current flowing through a short section of thin wire within the ammeter.

Mechanical Instrument

Such a mechanical instrument as the hot wire ammeter, shown in **Fig. 1** and hot wire thermocouple ammeters are not now generally available. The design presented here, is based on the technique of a current transformer, feeding a moving coil meter, calibrated to read root mean square (r.m.s.)* current, via a rectifier.

(The r.m.s. value of a sinewave is the mathematical derivation of the effective d.c. voltage that produces the same power in the load as a sinewave with a known peak voltage.* **Editor**)

The heat generated by the actual current flowing, caused the length of the wire to extend slightly. This slight extension was magnified via a pointer, and used on a scale, as an indication of the r.f. current passing into the feeder system and so to the antenna.

Consider what this current flow can show. In tuning up and loading antennas, it follows that the more current flowing into it the better. More current means a stronger magnetic field and hence potentially more signal radiated.

The r.f. ammeter can also be used for transmitter power output measurements. Working in to a matched dummy load or tuned and correctly matched antenna, which can be also considered as a pure resistance, measurement of the current will indicate the power.

For example with a 50Ω load and a with a measured current of 0.5A flowing, power (given by $I^2 R$) is 12.5W. Interestingly a current of 1A flowing in a 50Ω load, represents a power 50W.

With the lower h.f. bands and antennas that were often random length, measurement of current in the antenna was the easiest solution to maximising output. Using the r.f. current ammeter this approach can be repeated and other experiments with long wire antennas made.

Circuit Diagram

The circuit diagram of my current meter, is shown in **Fig. 2**. One big advantage of this approach is its tolerance to overload. The old hot wire instruments were very easily burnt out and even a moderate overload would alter the characteristic of the hot wire making it very inaccurate.

The design uses a current transformer with a ratio of 50:1. So, for a current of 1A flowing in the primary circuit, the secondary current will be 20mA. The secondary r.f. current is rectified by the diode bridge, D1-D4, and used to drive the shunted moving coil meter M1.

The peak value of a sinewave is 1.414 times (√2) its r.m.s. value (either current or voltage). But in a meter the value indicated in not the r.m.s. but the value of the mean voltage (or current). Like all moving coil meters, the displayed value of the rectified a.c. is the mean value of the a.c. voltage's peak level. And so, this must be taken

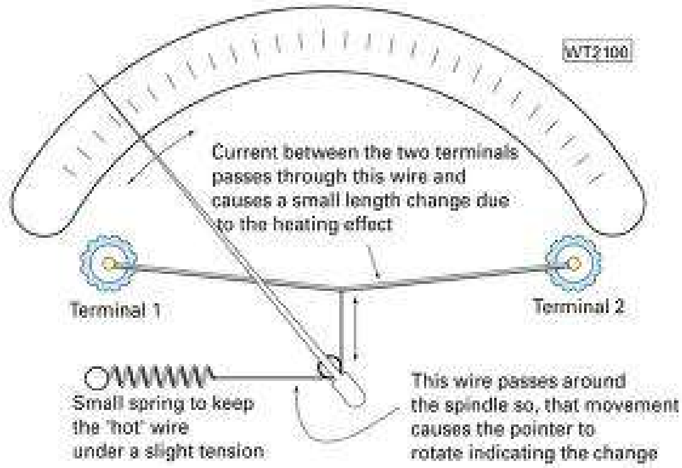


Fig. 1: A skeleton view of a hot wire current meter, an instrument that reads a.c. (r.m.s.) or d.c. current with the same scale. See text for more details.

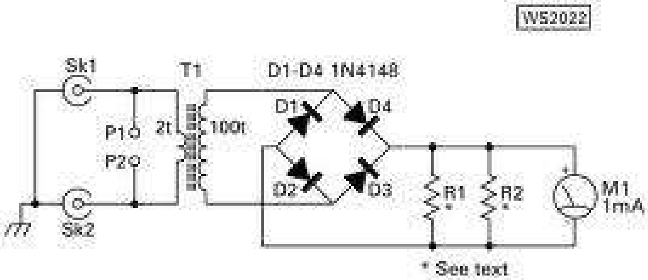


Fig. 2: The circuit diagram of G0TFP's r.f. current meter. See text for more detail.

into when calibrating the meter.

Mean Value

The mean value of a sinewave is 0.636 times the peak level. Hence the meter will not indicate the r.m.s. value, but the lower, mean value. Let's assume we wish to measure a primary current of 1A r.m.s.. The 20mA r.m.s. in the secondary must be shunted to display the mean value of this value at full scale. We must bypass some of the secondary current with low value resistors, shown as R1 and R2 in the circuit diagram of Fig. 2.

The peak value of a 20mA current is 28.28mA so, the meter must be shunted to show a full scale reading with the mean of this current. To calculate the mean value of 28.28, multiply it by the mean conversion ratio of 0.636. So, 0.636Y28.28 = 17.98mA or more practically 18mA full scale, corresponding to a primary current of 1A r.m.s..

If you know the internal resistance of the milliammeter, then it's quite easy to calculate the actual value of the shunt. But I've found that the best way to make up the shunt is by trial and error using several low value resistors connected in parallel. In my prototype, this worked out as a shunting resistance made from one 15Ω and two 10Ω resistors in parallel, giving 3.75Ω in parallel with the 1mA meter.

Construction Simple

Construction of the current meter is simple, as shown in the photographs. Just remember to keep leads short and layout as compact as practically possible, **Fig. 3**. The toroidal current transformer is wound as a single layer with 100 turns of 0.2mm (36s.w.g.) enamelled wire and two turns of 1 x 0.24 plastic covered hook up wire.

I find that a convenient way to wind 100 turns on the toroid is to take a little over two metres of the enamelled wire and thread one end on to a darning needle. Pass half the wire through the toroid, held in a bulldog clip, and restrain the wire.

Use the needle to feed the wire through the middle of the toroid, as you wind 50 turns evenly over the free half of the toroid. Next rotate the toroid, so that the wound half is held in the bulldog clip, then again using the needle, thread the remaining half length of wire through the toroid to wind a further 50 turns.

You should now have a single winding with 100 turns evenly wound on the toroid. A small dab of glue at each end will hold this winding in place. Then wind the primary two turns onto the toroid, leaving the ends free.

Circuit Board

My circuit board is assembled and can be positioned so that direct connection to the terminals can be made, **Fig. 4**. This will also support the circuit board. Cut unwanted tracks and ensure that the terminal nuts are not making any unwanted short circuits. The toroid is supported by the primary winding and held in place by dropping melted candle wax on to the toroid and circuit board.

After checking that all is well the ammeter is ready to use. The prototype was checked using a transmitter and dummy load. Calculation of power from current measurements showed good correlation with the selected power levels from the transmitter.

Now you can begin testing out all your antenna systems, and you have a reading of the real power passing up into the antenna system. You never know - you might dispense with the s.w.r. meter all together! *PW*

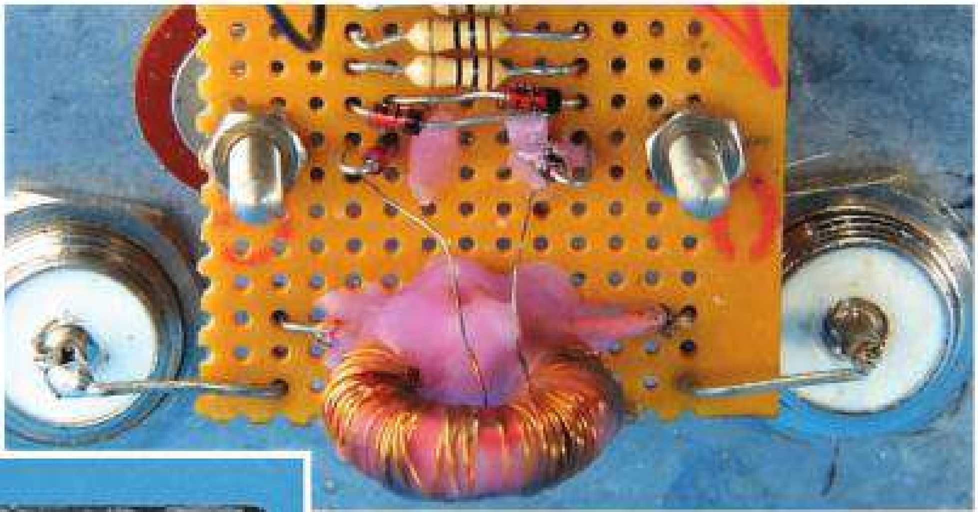
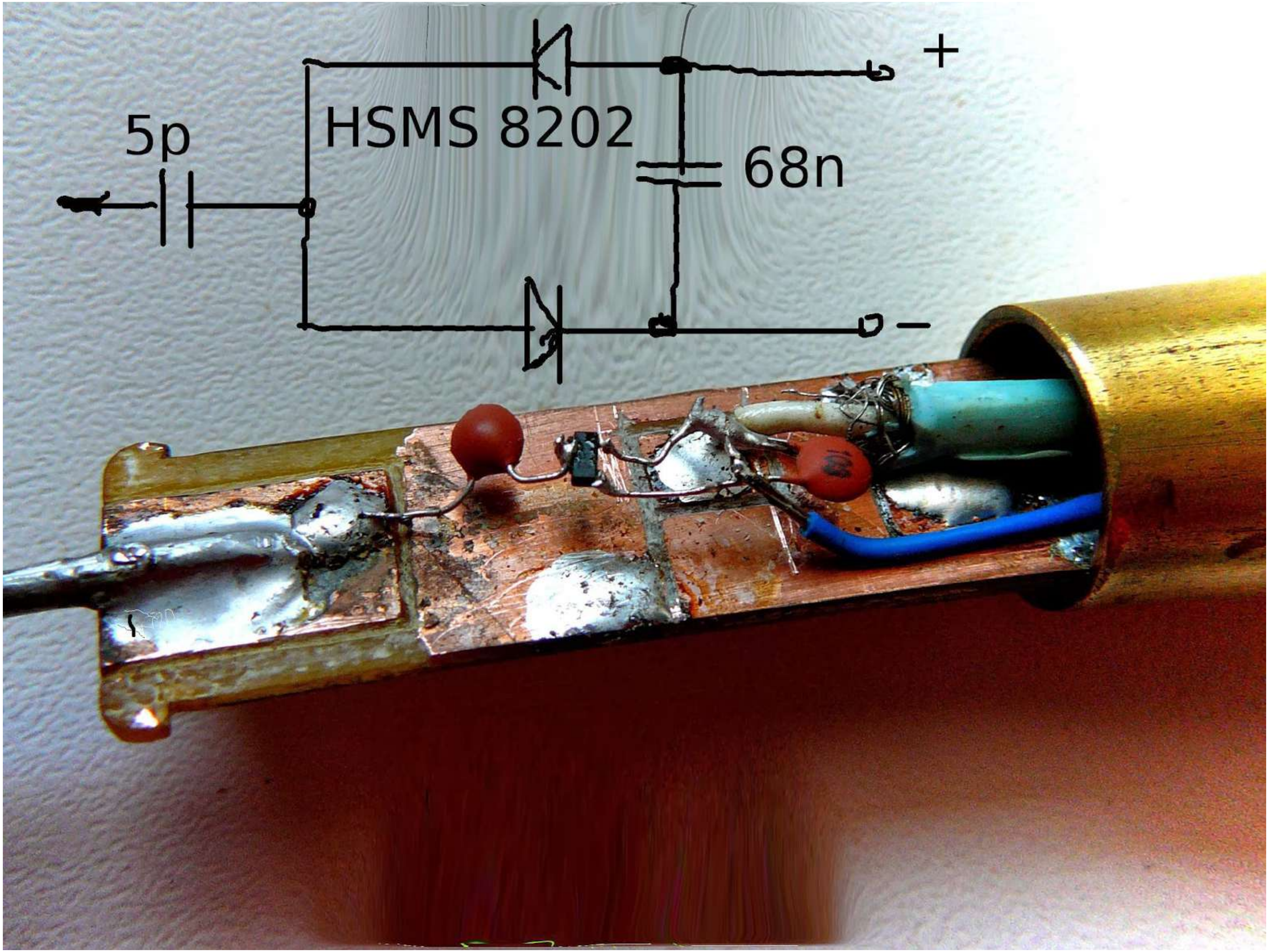


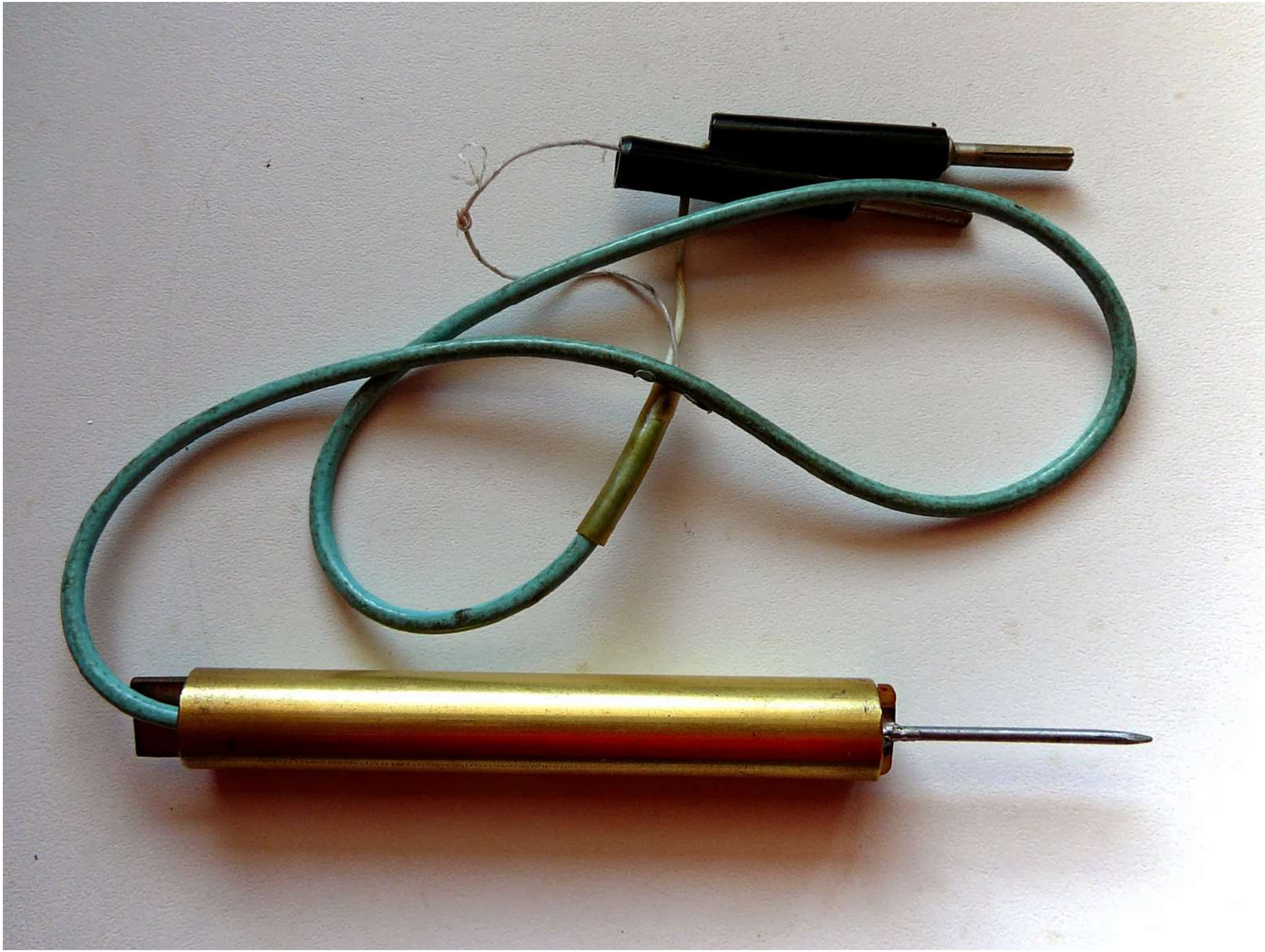
Fig. 3: All components are mounted on a small piece of Perf-board mounted between the two coaxial sockets.

Fig. 4: A close up of the simple layout of the current sensing transformer, rectifiers, and loading resistors.

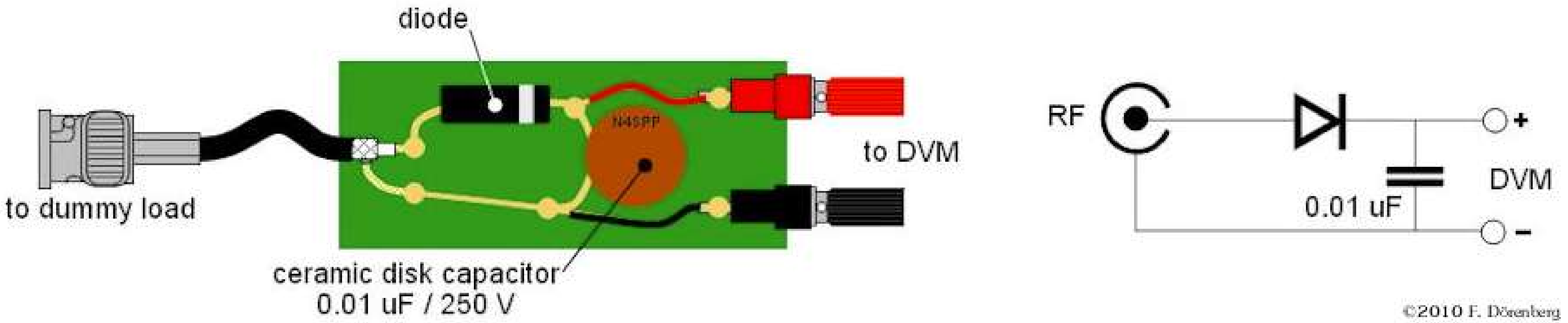
COMPONENT LIST

To make the r.f. ammeter, you will need the following items:
A 1mA moving coil meter, four diodes (typically IN4148 or IN914), one T68-2 toroid (Micrometals), several low value resistors for shunt (see text), two panel sockets, two terminals, a die cast box (depth to suit meter) and finally, a small piece of Veroboard or Perfboard.


5p
HSMS 8202
68n
+
-



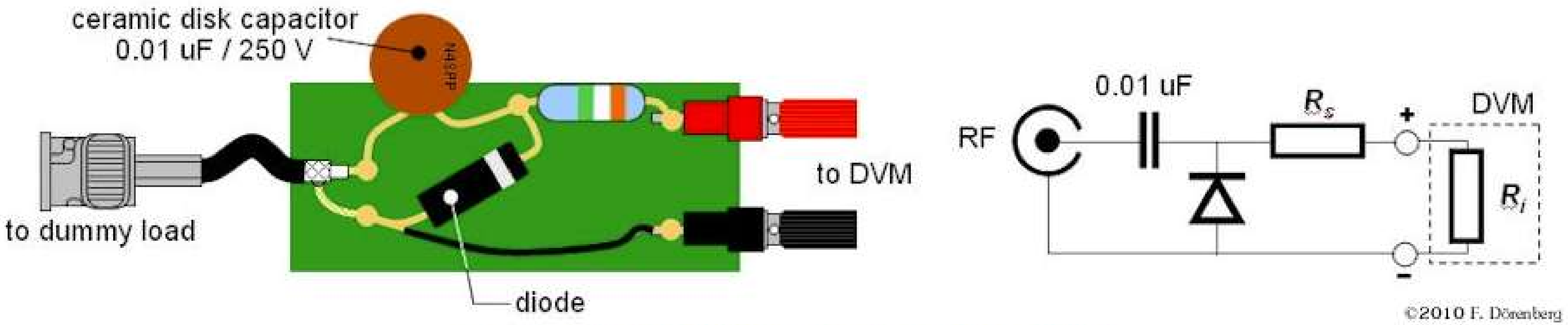
Here is a simple standard circuit:



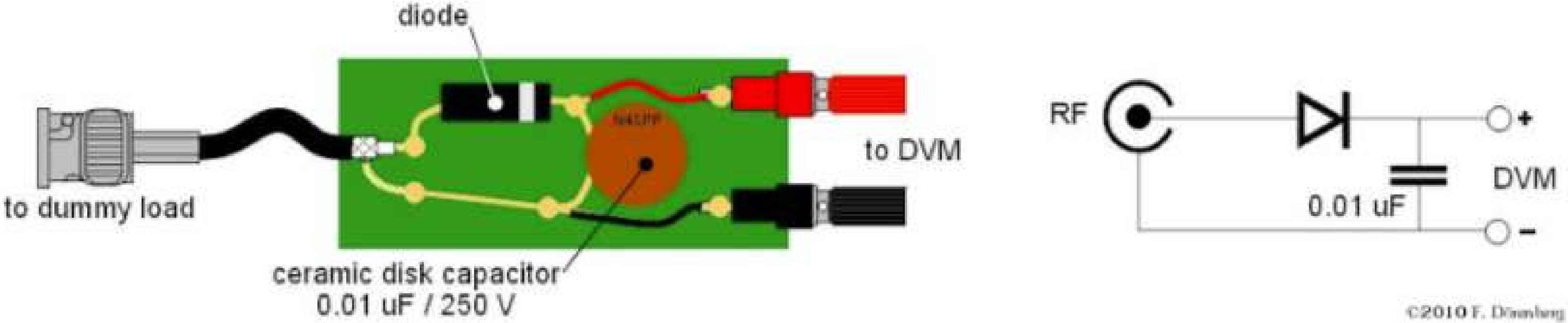
A simple RF-probe

Obviously, this circuit will be fooled by a DC-offset on the RF signal. We can fix this by swapping the diode and the capacitor. Note that this is not necessary if you measure an RF voltage via a transformer, such as a directional coupler.

We can also make life a little easier by including a voltage divider with a scaling factor that is equal to the reciprocal of √2. Then the output voltage will be the RMS value that we are interested in. We can make a voltage divider where one resistor is the input impedance of the DVM. My DVM has a published input resistance of 10 MΩ. The second resistor should be 4M14 Ω,since 10 / (10+4.14) = 1 / √2). So 3M9 + 220k = 4M12 would be a good choice. This approach is shown below. Note that the resistor should be non-inductive (e.g., bulk-metal-foil or carbon).



RF-probe with DC-block and peak-to-RMS scaling



A simple RF-probe

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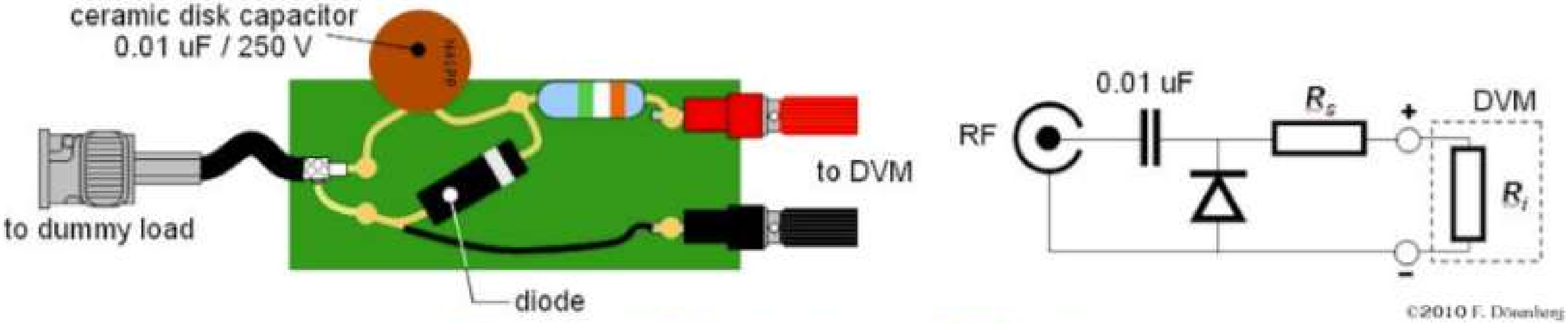
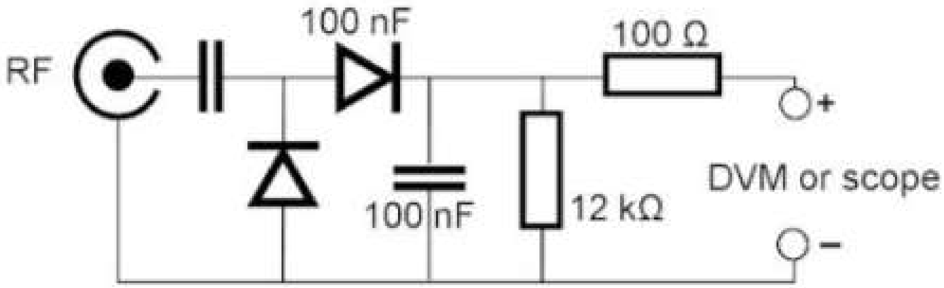
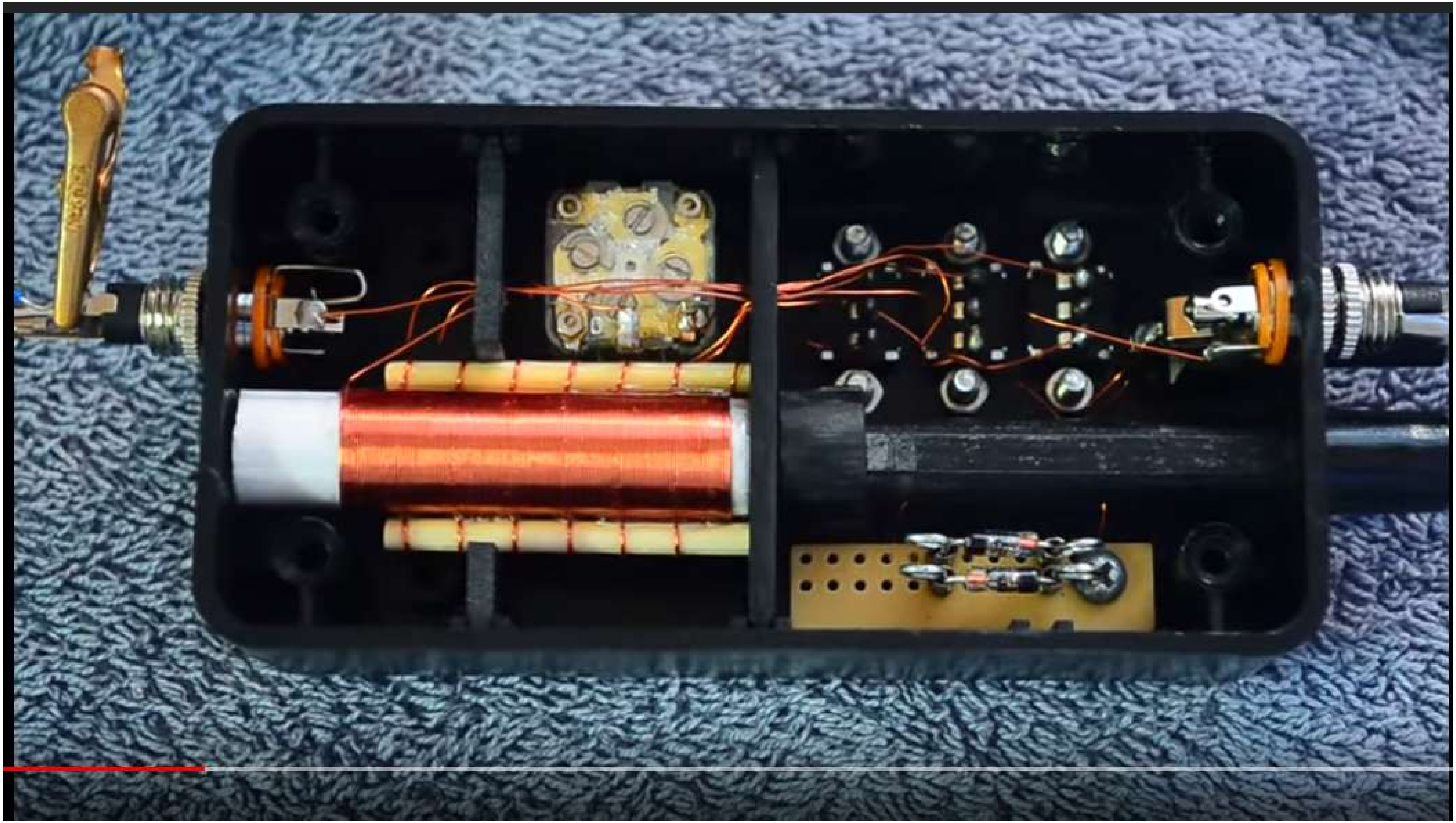


RF-probe with DC-block and peak-to-RMS scaling

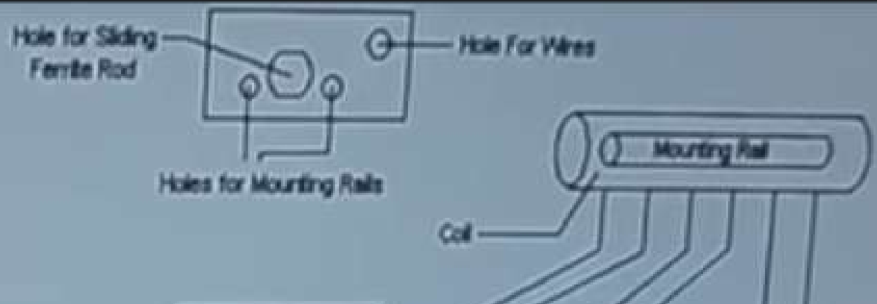
A variation on this, with a full-wave rectifier, is shown below:

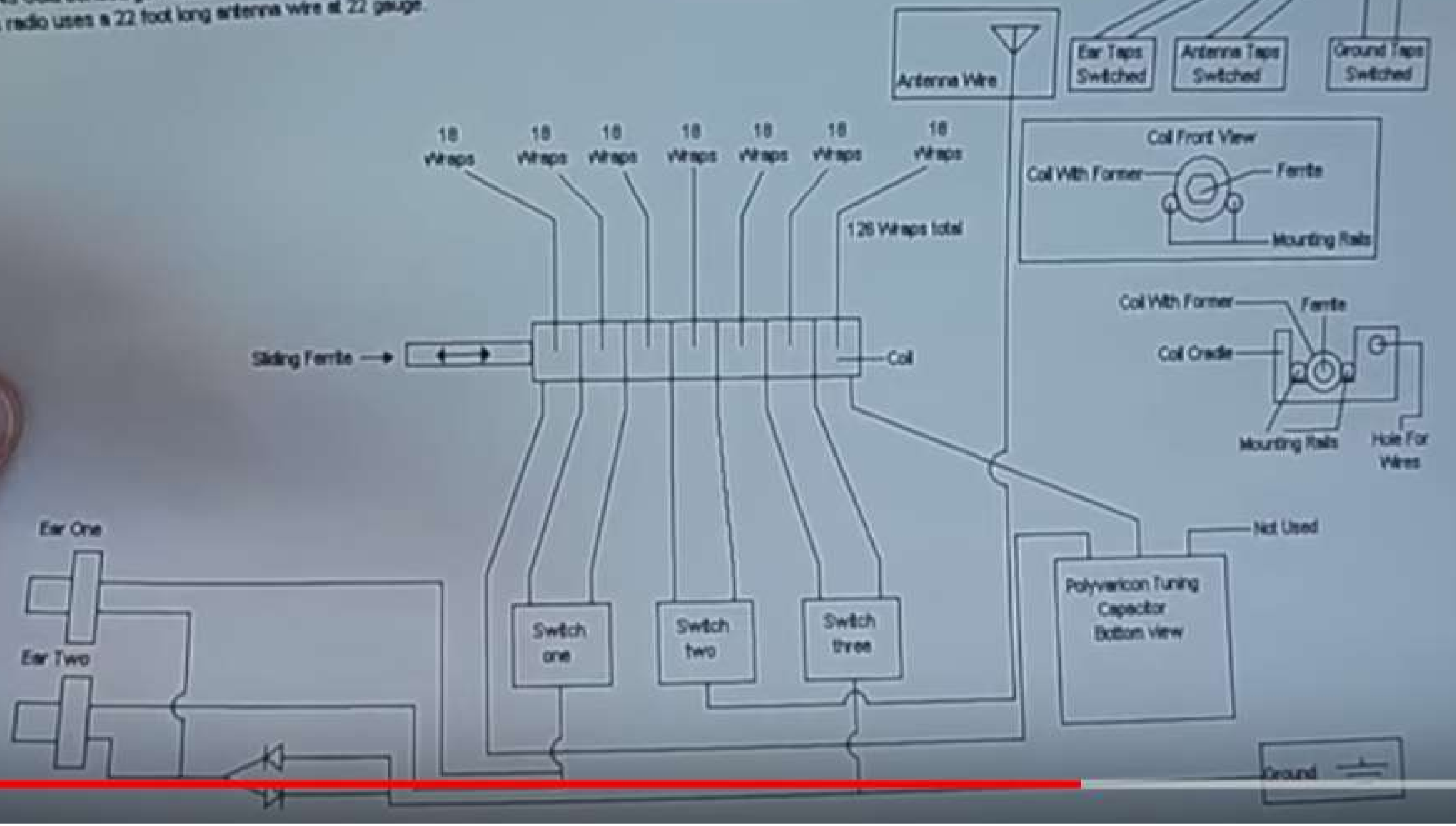


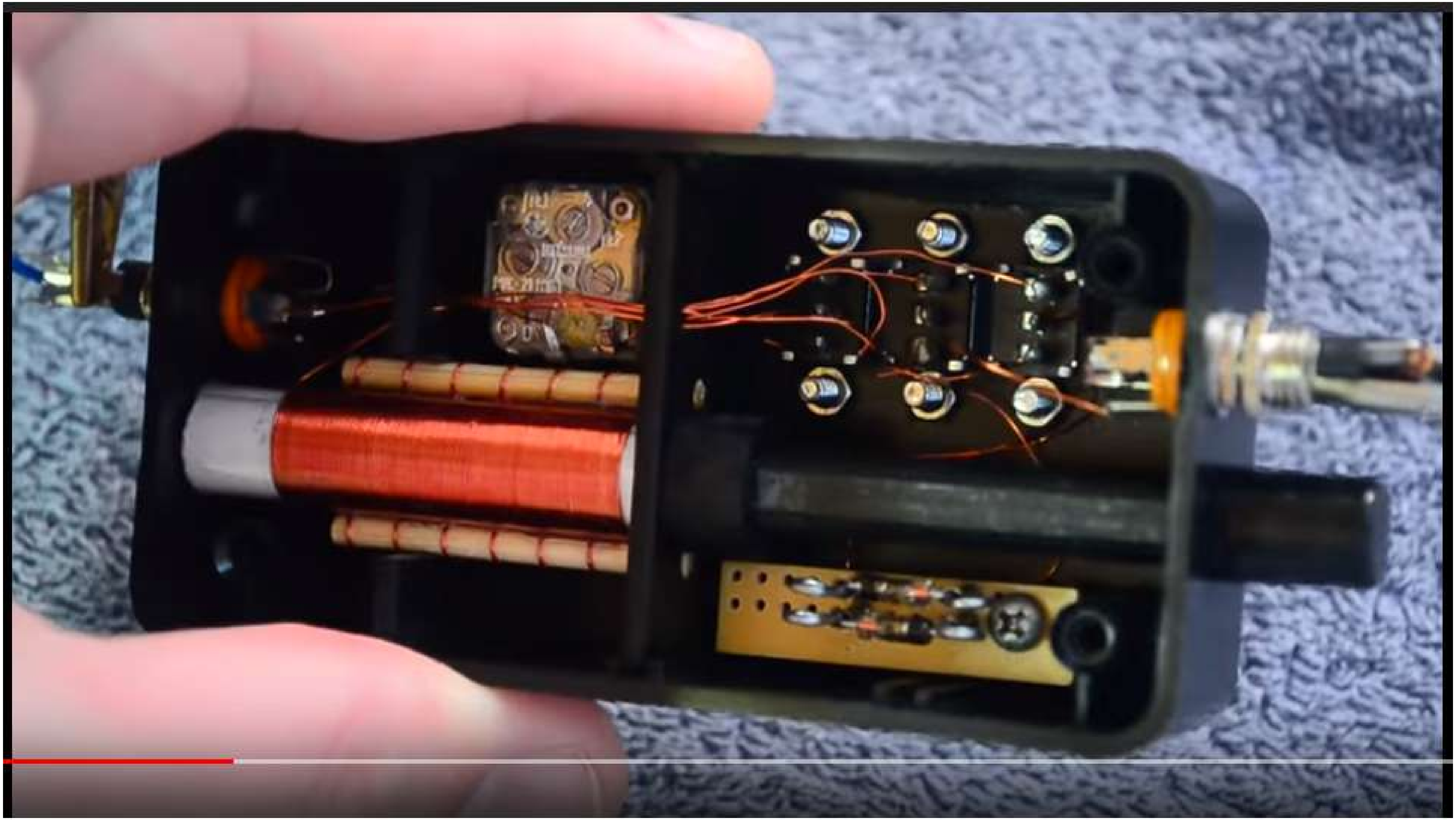
Note that these diodes are available from several manufacturers and the Vf and Vrrm may vary slightly between them. I opted for an OA91 diode, as I had one in my junk box. Note that this limits the measured power to 20 W. The AA118 (or its substitutes AA113 and 1N60) is good through 32 Watt into 50 ohm. For further considerations, see ref. 2 and 8.



Portable Homebrew crystal radio by Stalwart1ixer.
Primary tuning is done with the sliding ferrite rod.
Also includes a polyvaricon tuning capacitor and tap switches to aid with signal separation.
30 gauge magnet wire was used to make the coil.
There are 18 wraps of wire between each tap for a total of 126 wraps.
This radio is designed to be used with two piezoelectric earphones but can be used with an amplifier as well.
1N949 Gold bonded germanium diodes were used for this radio.
This radio uses a 22 foot long antenna wire at 22 gauge.



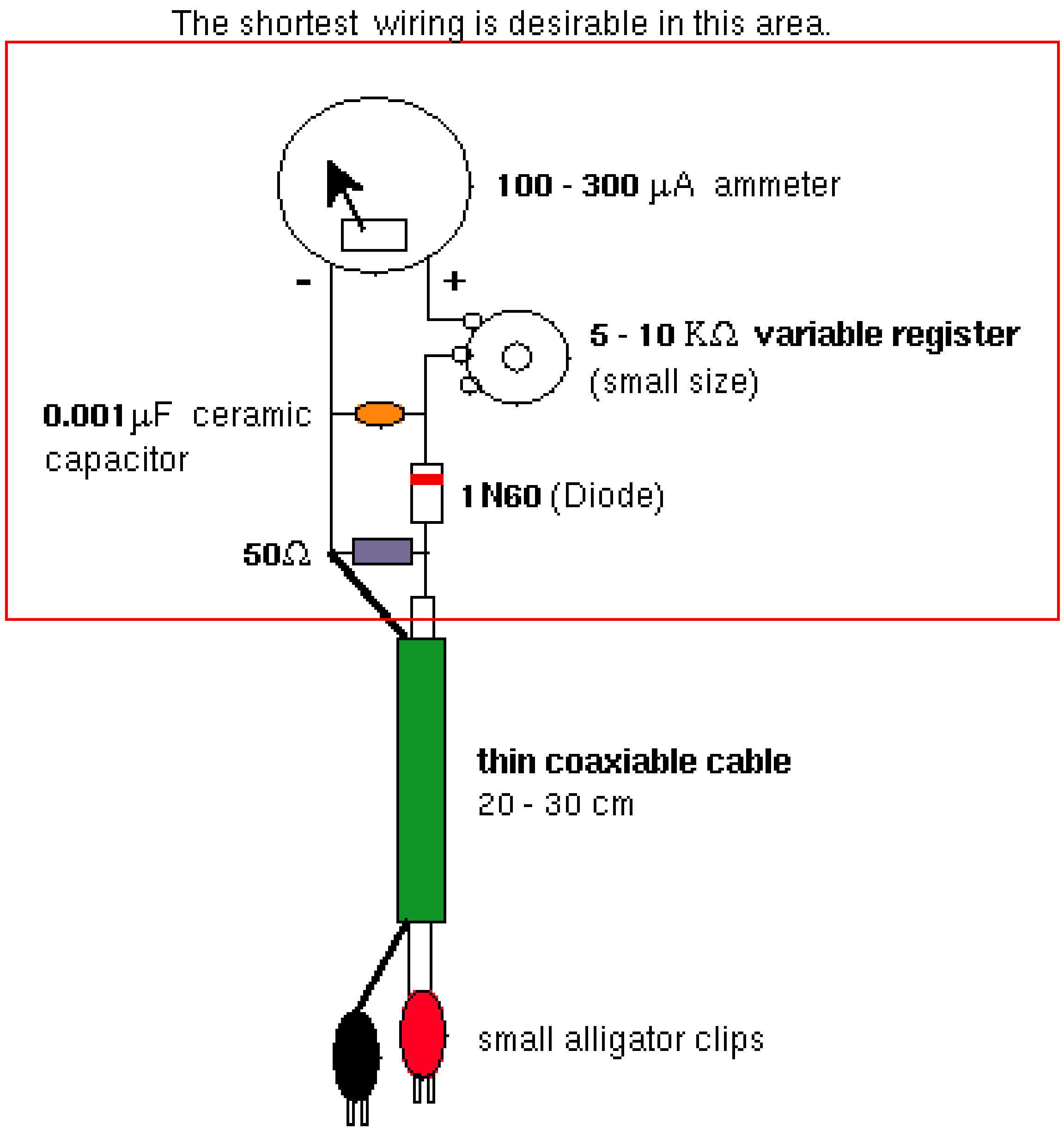




Up next

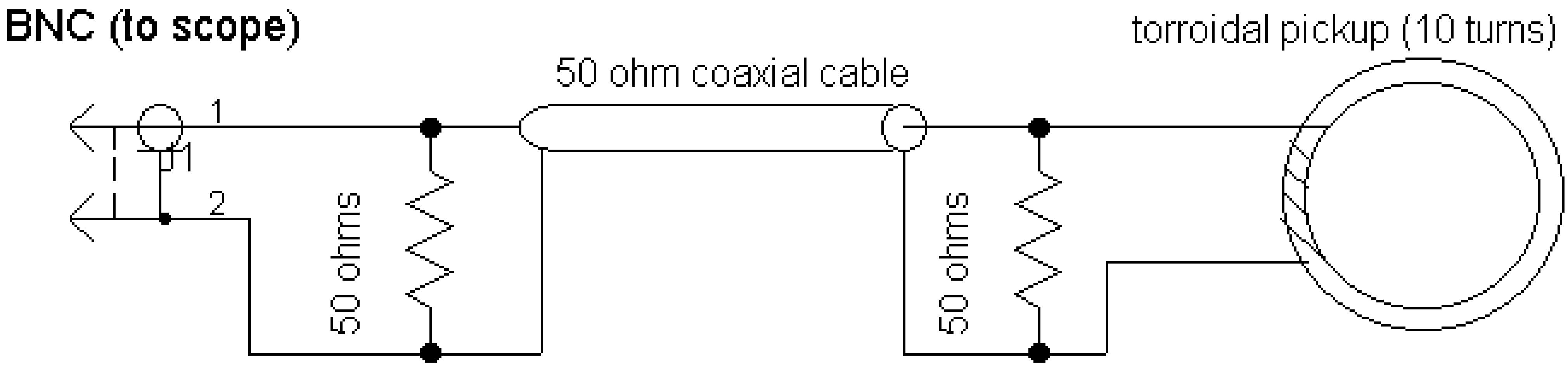
Homebrew Crystal Radio

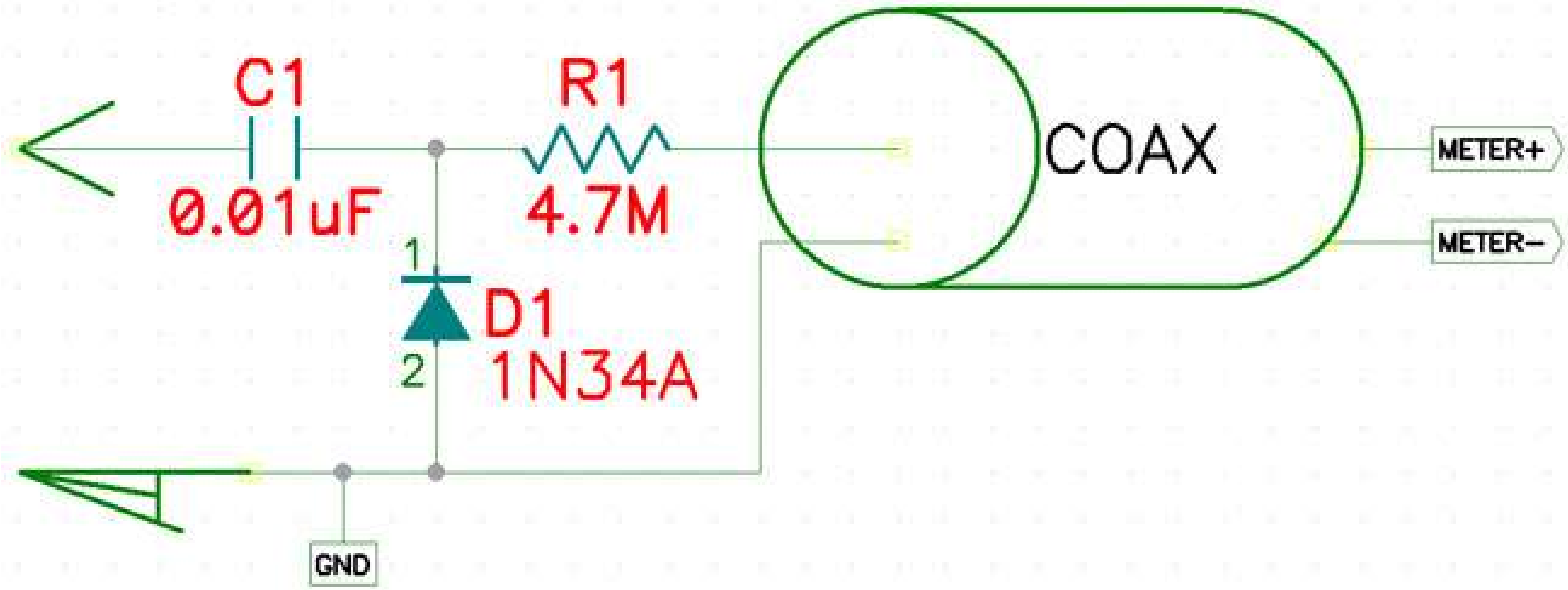
The simplest power meter



As for the ammeter, you can use an used one taking from junked audio amplifier, tape-recorder, radio-cassette, and so on.

RF Current Probe

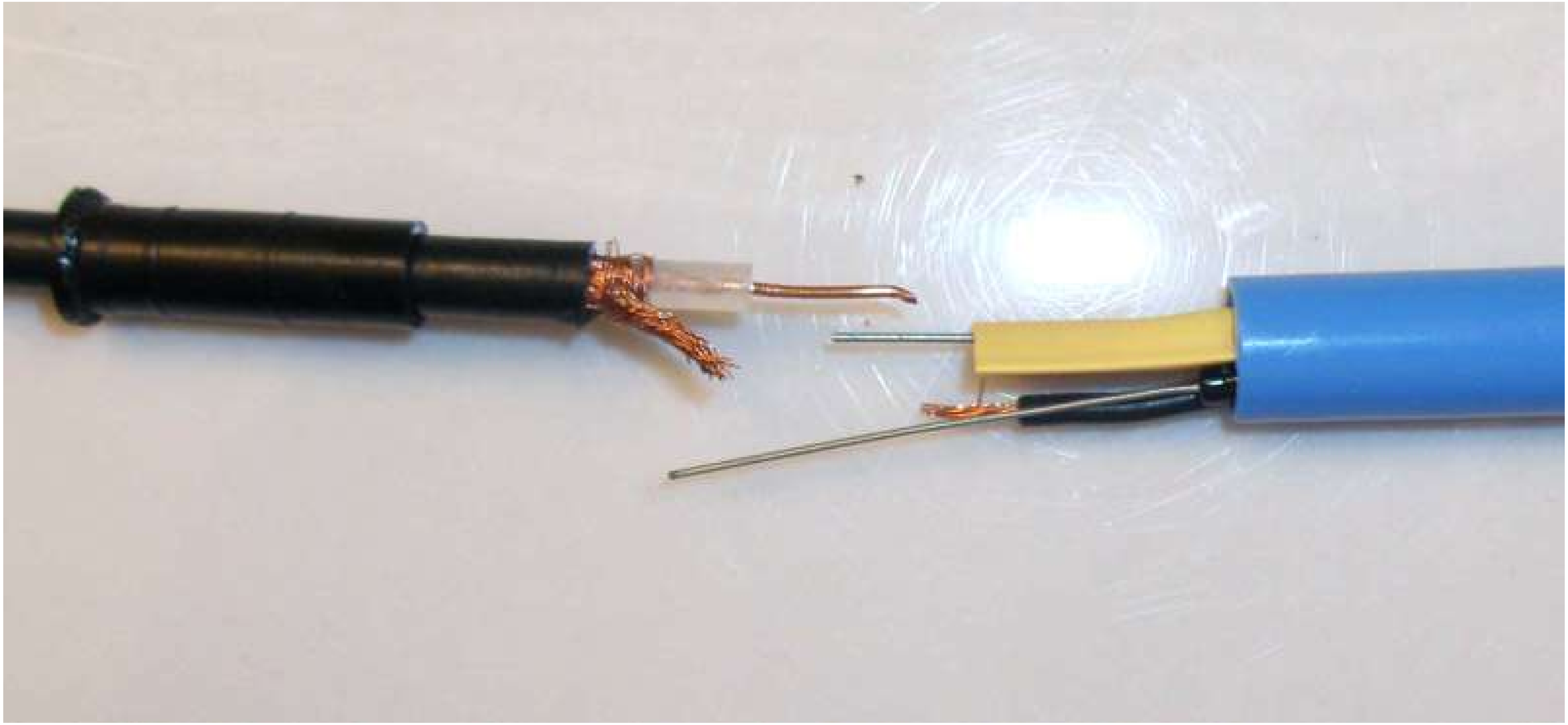


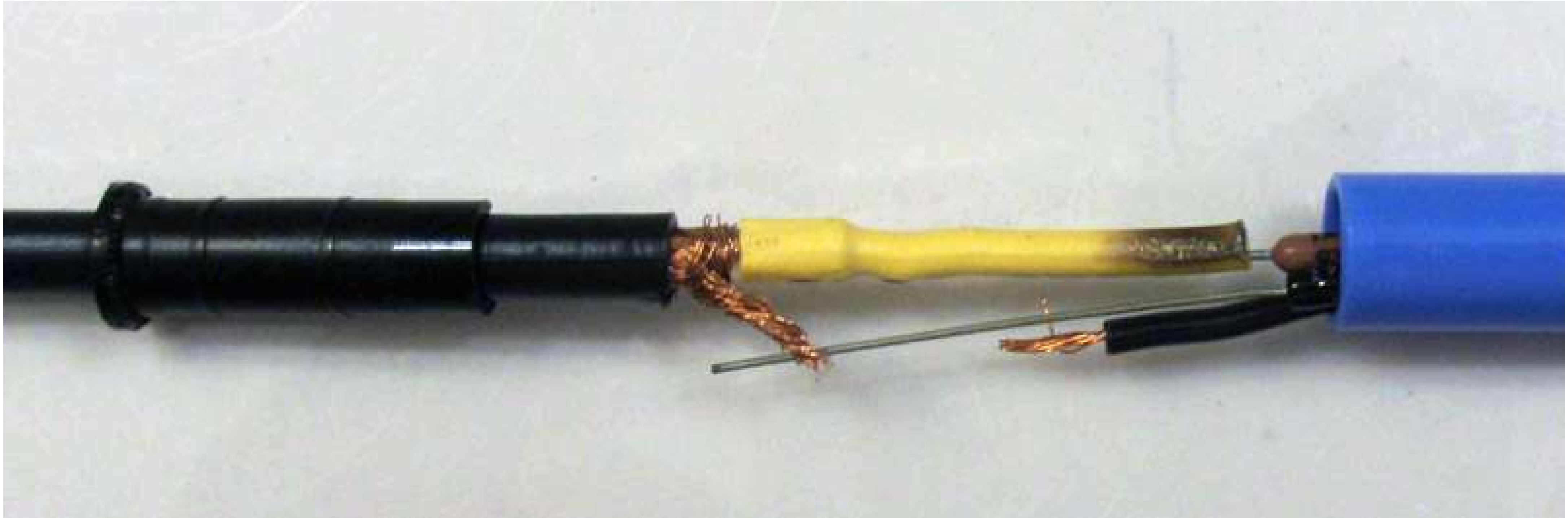


Simple RF Probe


Precision Metals
Stock # 164

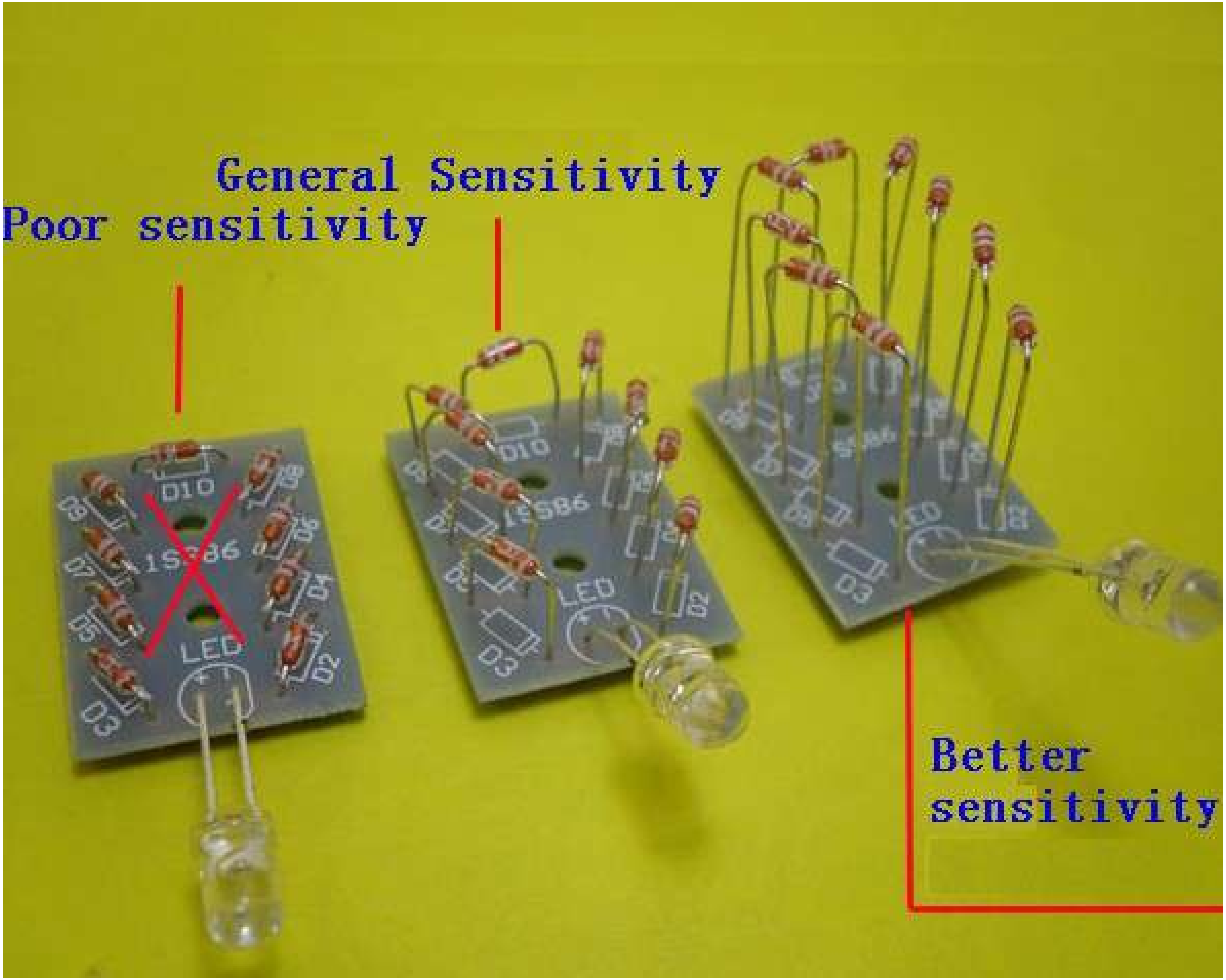

RG 58

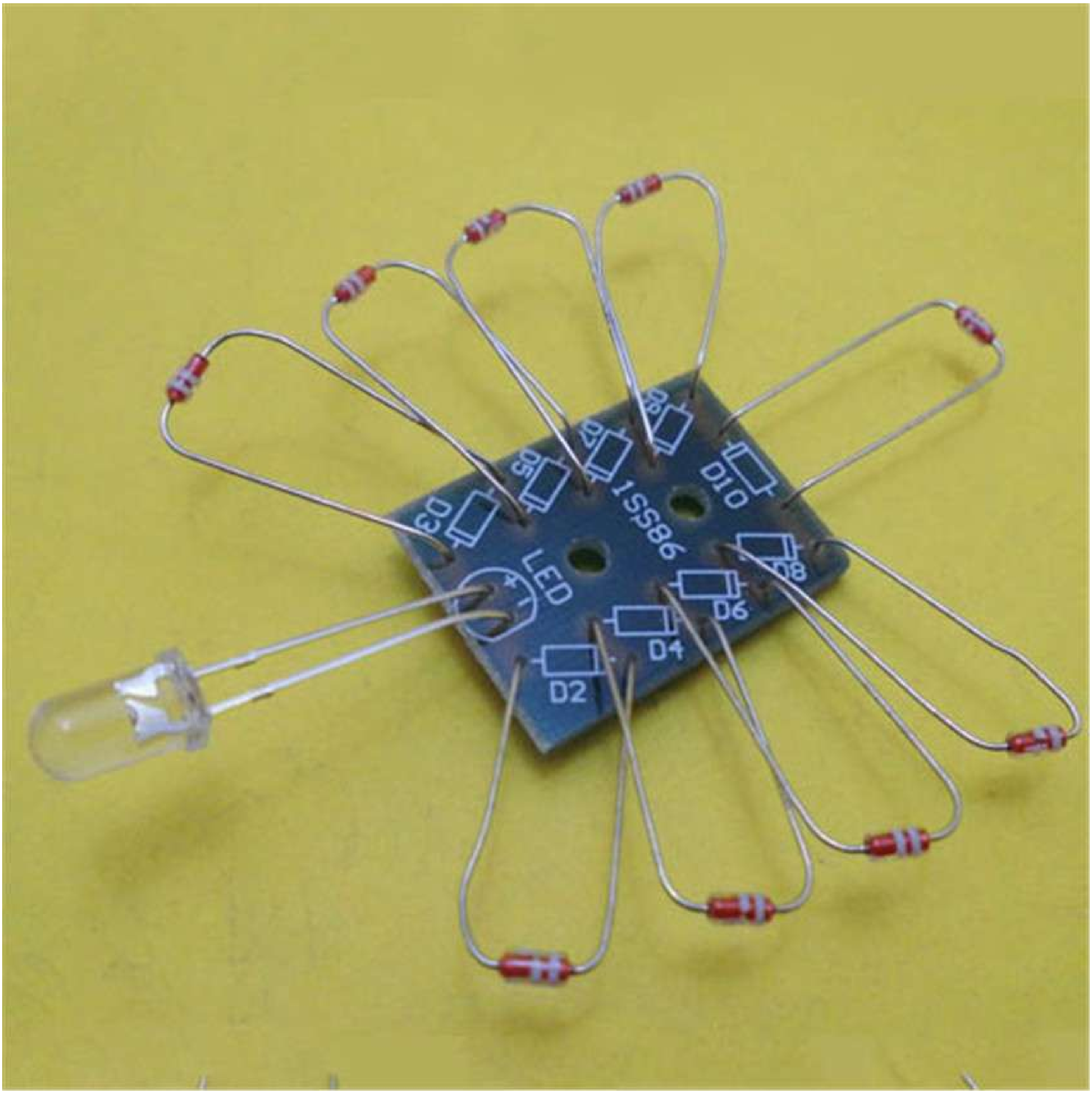




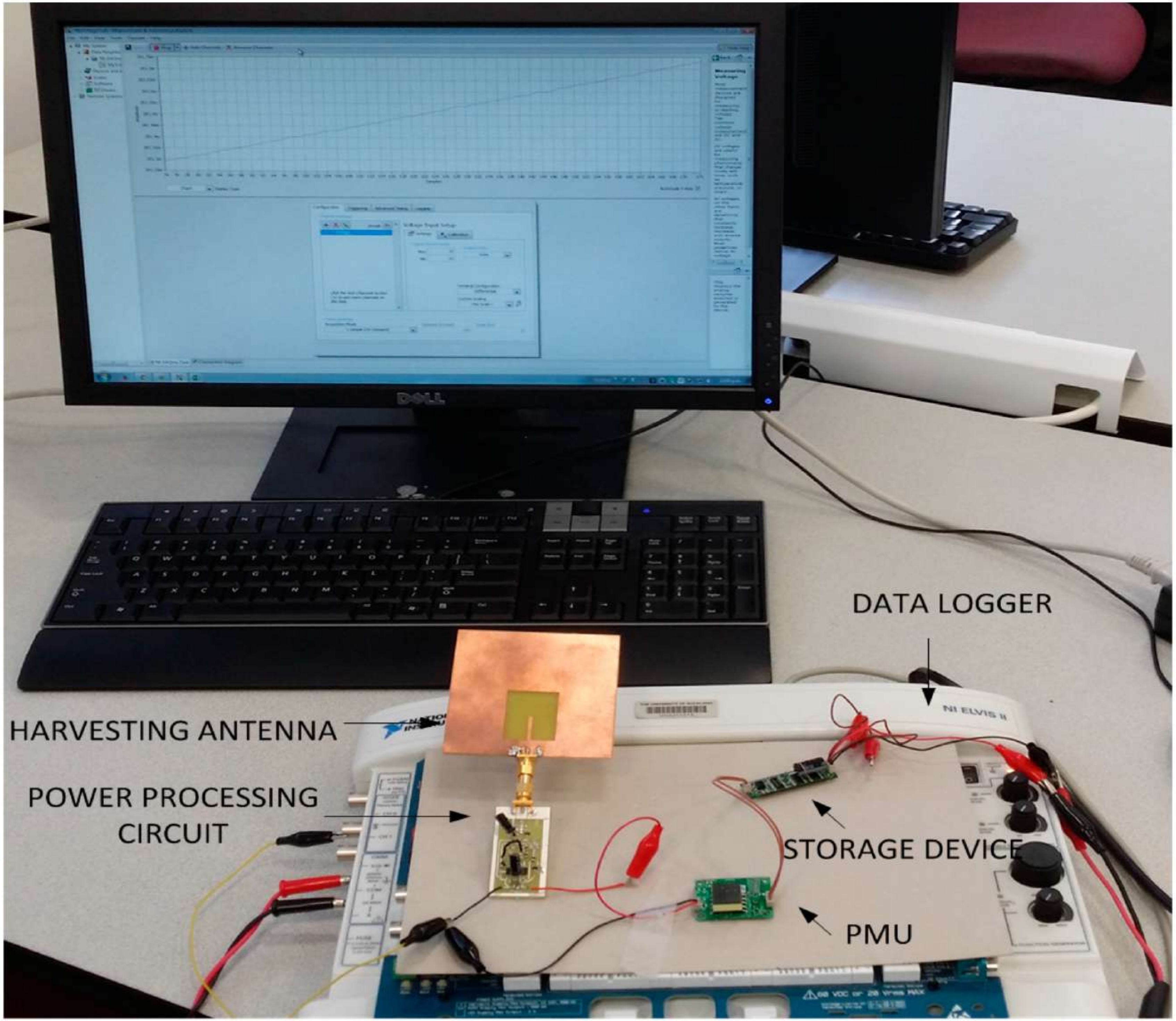

TENMA
72-4025
POWER
AC
DC
A
V
hFE
NPN
PNP
F
Ω
DISCHARGE CAPACITOR BEFORE CONNECTING
mA
COM
VΩ
10A

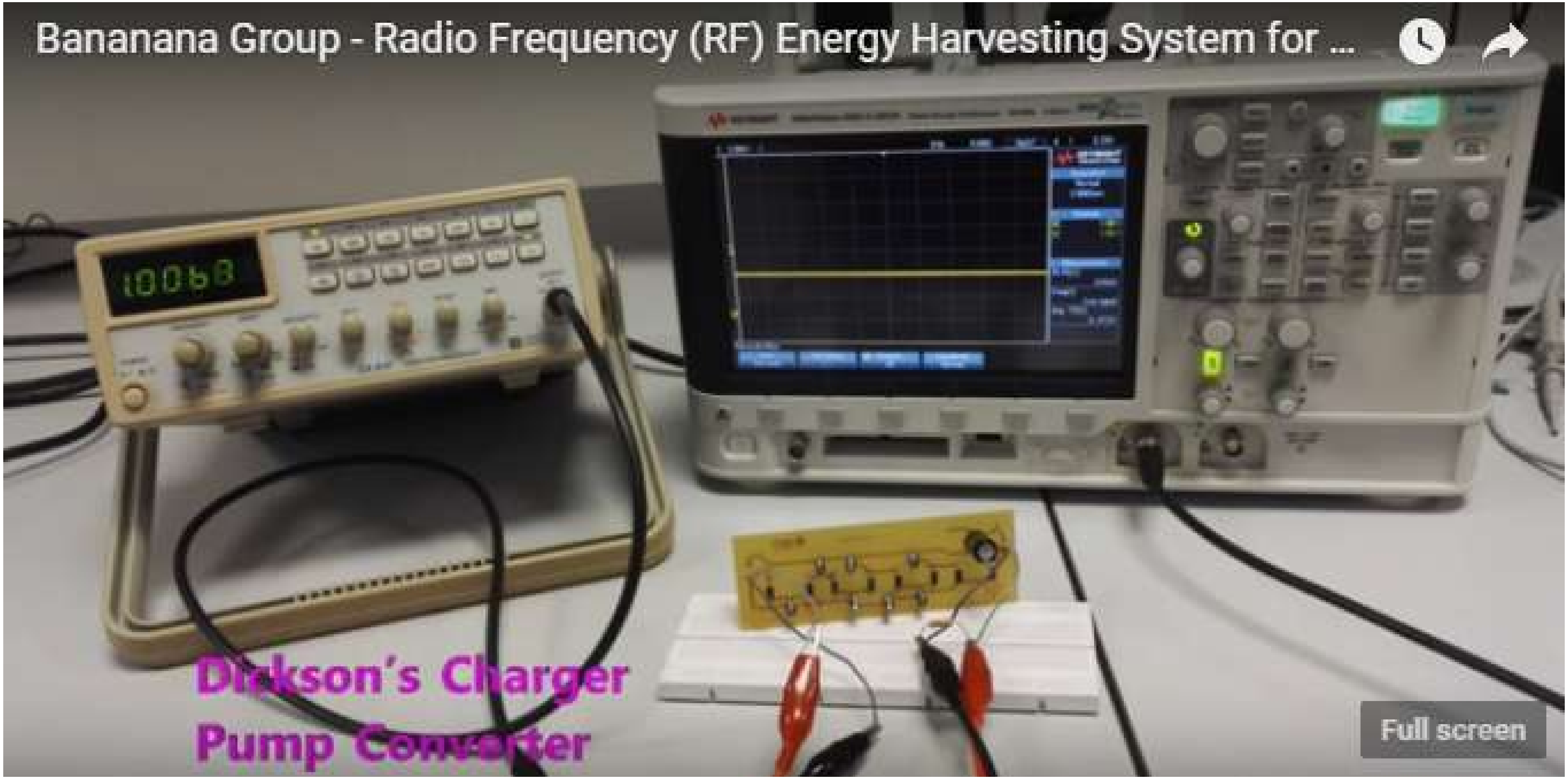
Ham Radio Project
BAND
C1
D1
D2
C2
D3
D4
Harvester Aerial
Charge
L1
C4
AF Out
D5
External Tune
Tune
Battery
V +
On
R2
I wanted to see the ambient radio harvesting voltage as the battery was not charging....
1:01 / 6:54

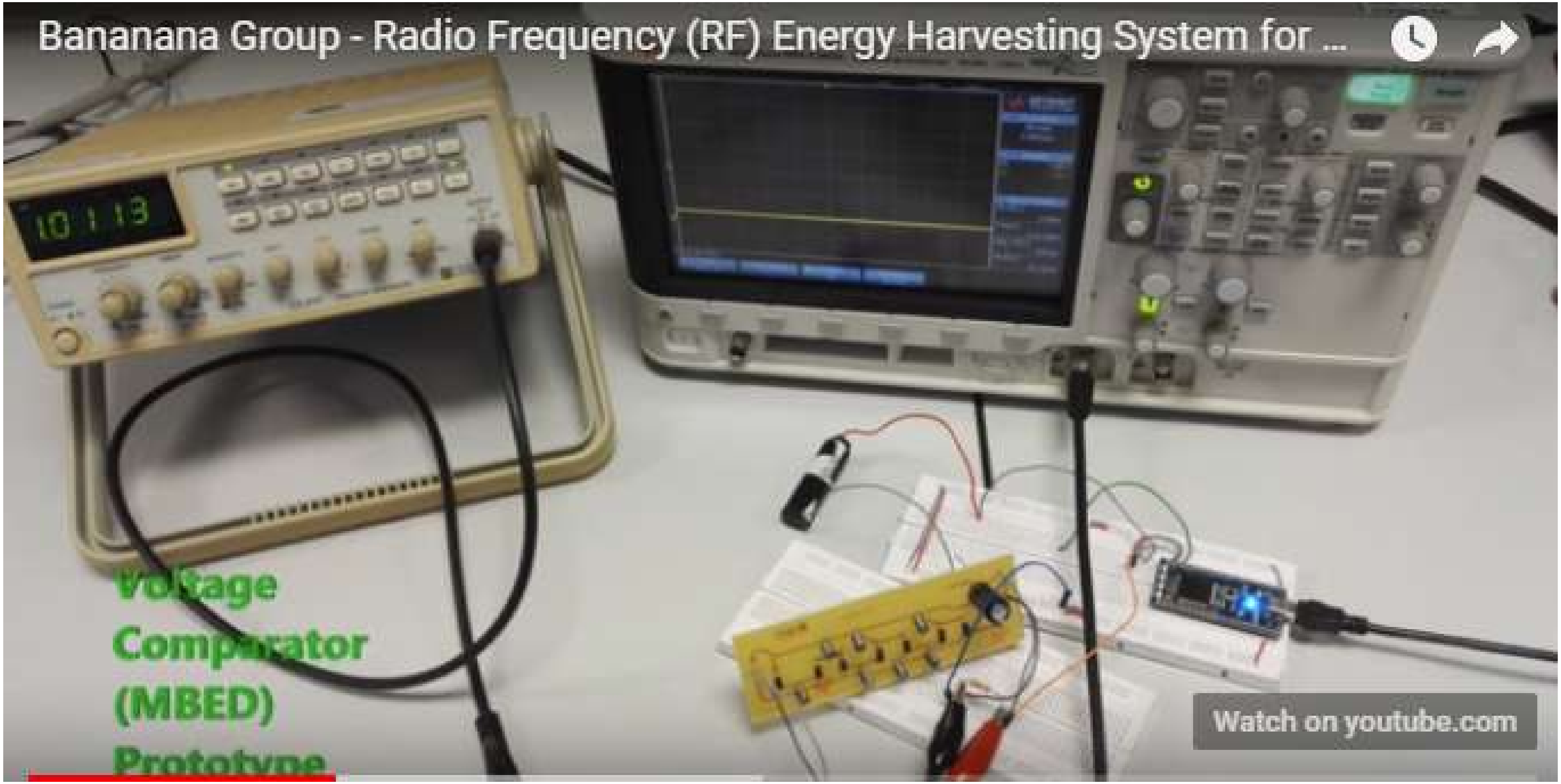

General Sensitivity
Poor sensitivity
D10
1S586
LED
D3
D2
Better
sensitivity

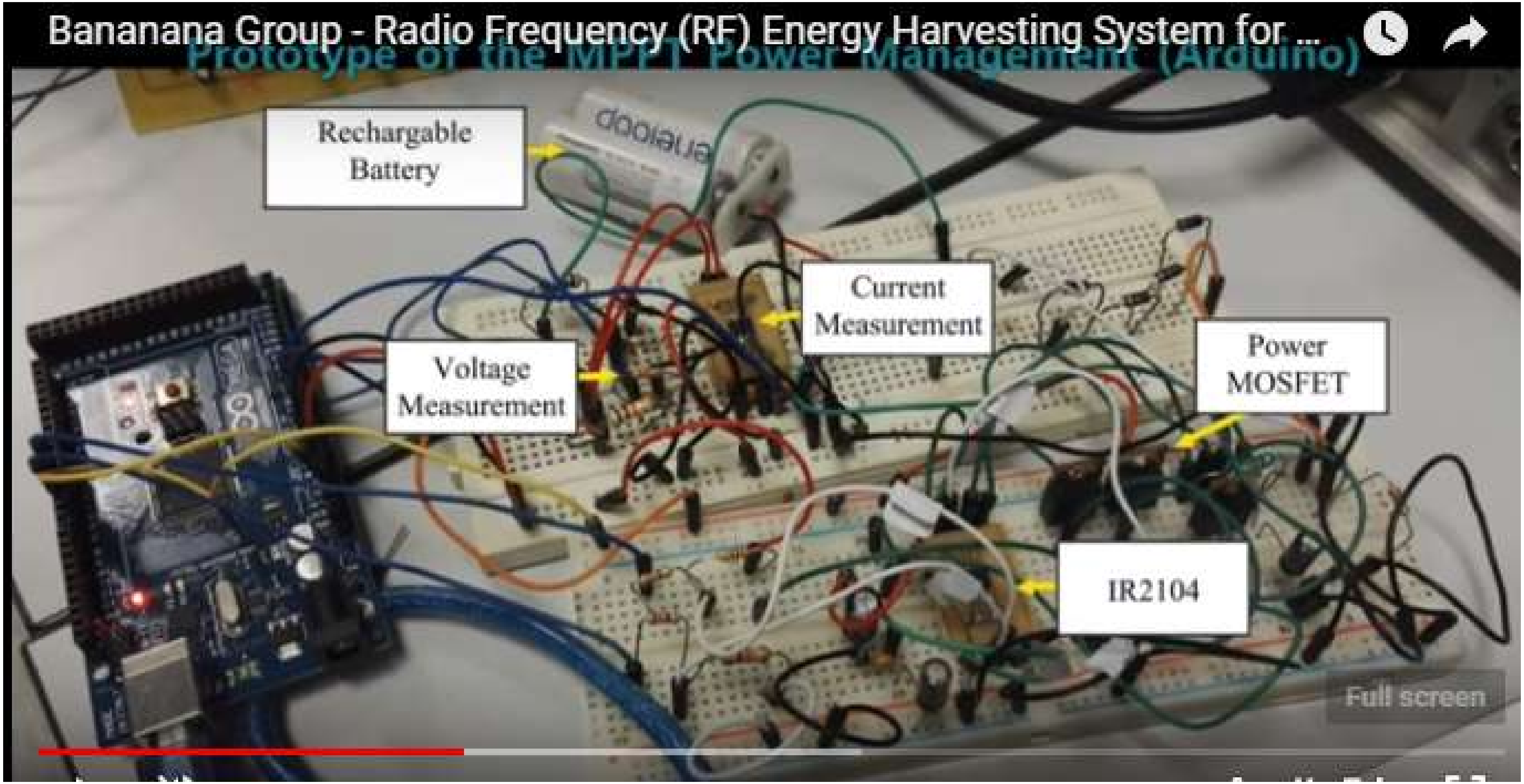

D3
D5
1SS86
D10
LED
D8
D6
D4
D2

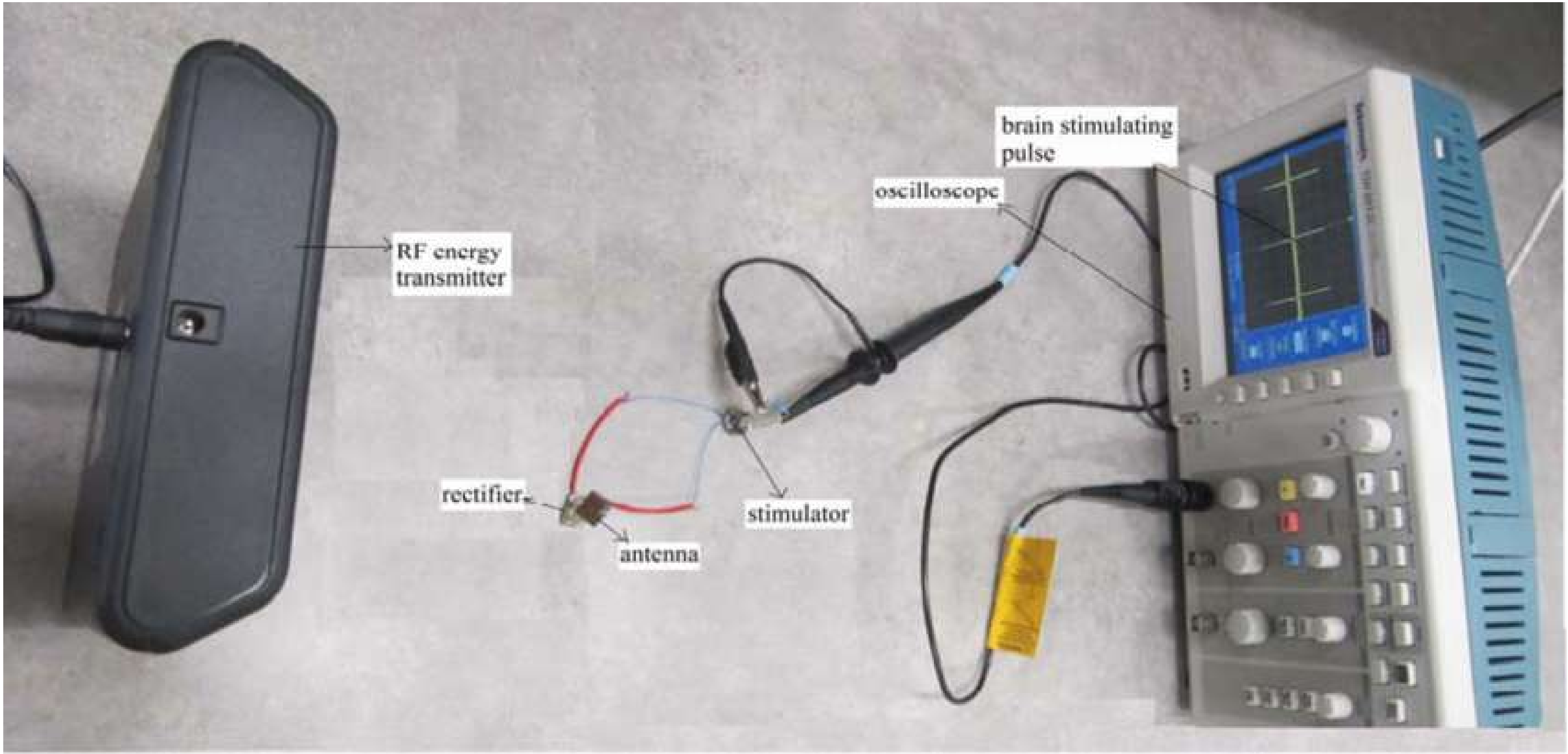

D10
1SS86
LED
D2

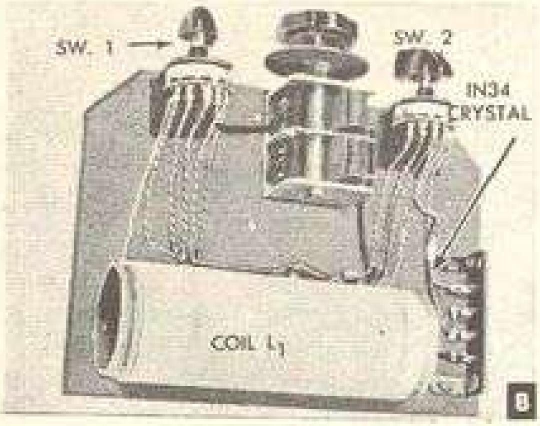

DATA LOGGER
NI ELVIS II
HARVESTING ANTENNA
POWER PROCESSING
CIRCUIT
STORAGE DEVICE
PMU


Bananana Group - Radio Frequency (RF) Energy Harvesting System for ...
Dirkson's Charger
Pump Converter
Full screen


Bananana Group - Radio Frequency (RF) Energy Harvesting System for ...
Voltage
Comparator
(MBED)
Prototype
Watch on youtube.com


Banana Group - Radio Frequency (RF) Energy Harvesting System for ...
Prototype of the MPPT Power Management (Arduino)
Rechargable Battery
Current Measurement
Voltage Measurement
Power MOSFET
IR2104
Full screen


brain stimulating pulse
oscilloscope
RF energy transmitter
rectifier
stimulator
antenna



RADIO RECEIVERS

SINCE a crystal set is the simplest form of radio receiver, it is the logical starting point for the student or junior experimenter. Unlike other types of receivers a crystal set uses no batteries or power-line supply, therefore the sound that emerges from the headphones is derived entirely from radio energy picked up by the antenna. Use a long, high antenna and a ground connection to a cold-water pipe.

The selective tapped-coil crystal receiver illustrated in photos A and B employs adjustable loading in a simple tuning arrangement that is very effective when used with a good sensitive pair of headphones. A schematic circuit diagram and the coil-winding details appear in Fig. 1; pictorial wiring diagram in Fig. 2 shows all connections clearly.

The 2-gang variable-condenser stator plates (S), are connected in parallel; the rotor plates (R) are common with the frame. This lead goes to the lever of switch No. 1; the lever of switch No. 2 is connected to one side of the 1N34 germanium crystal, and the headphones are in series.

When winding the coil, place a toothpick or

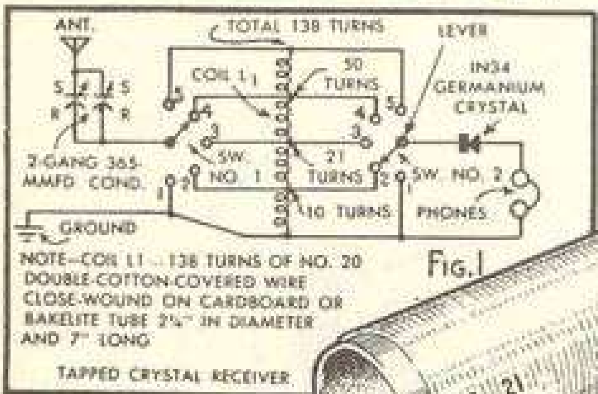


FIG. 1

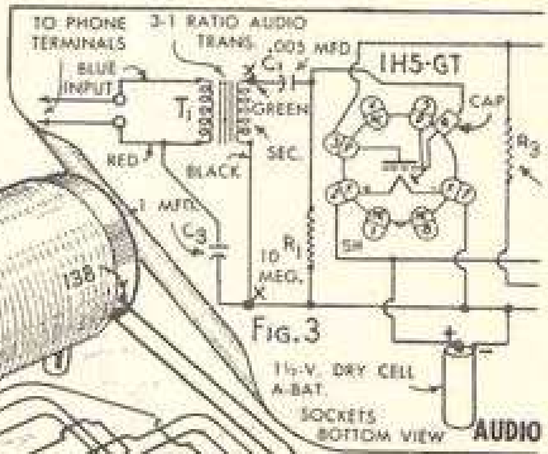


FIG. 3

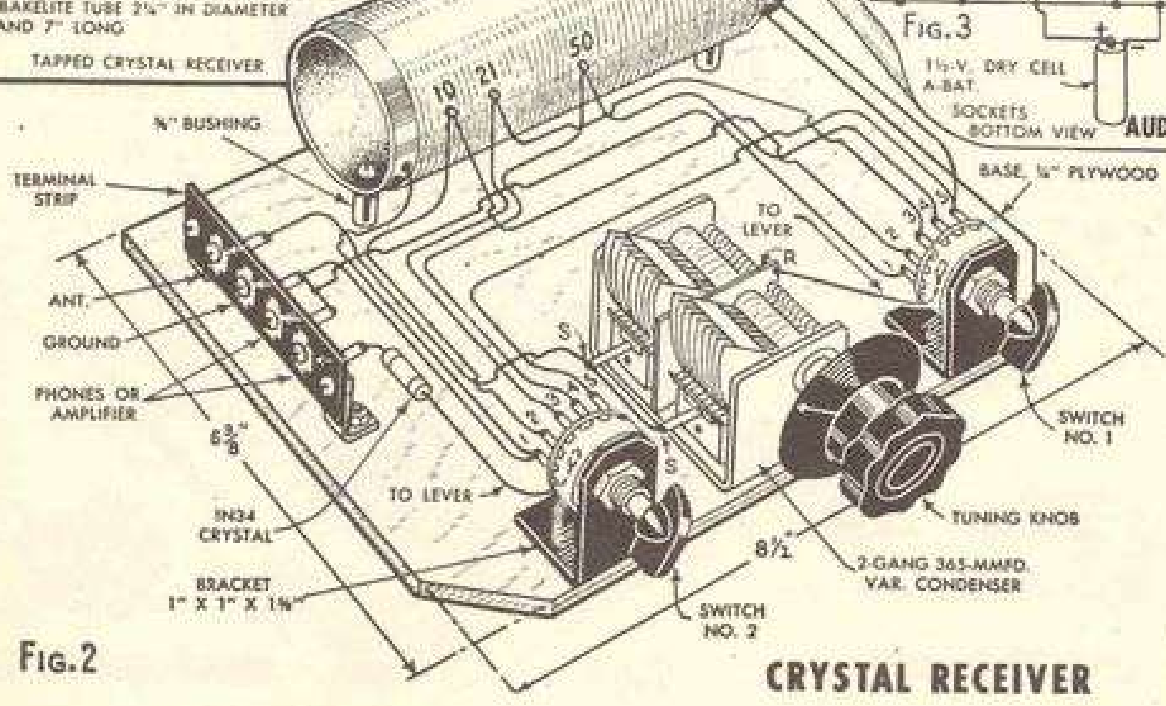
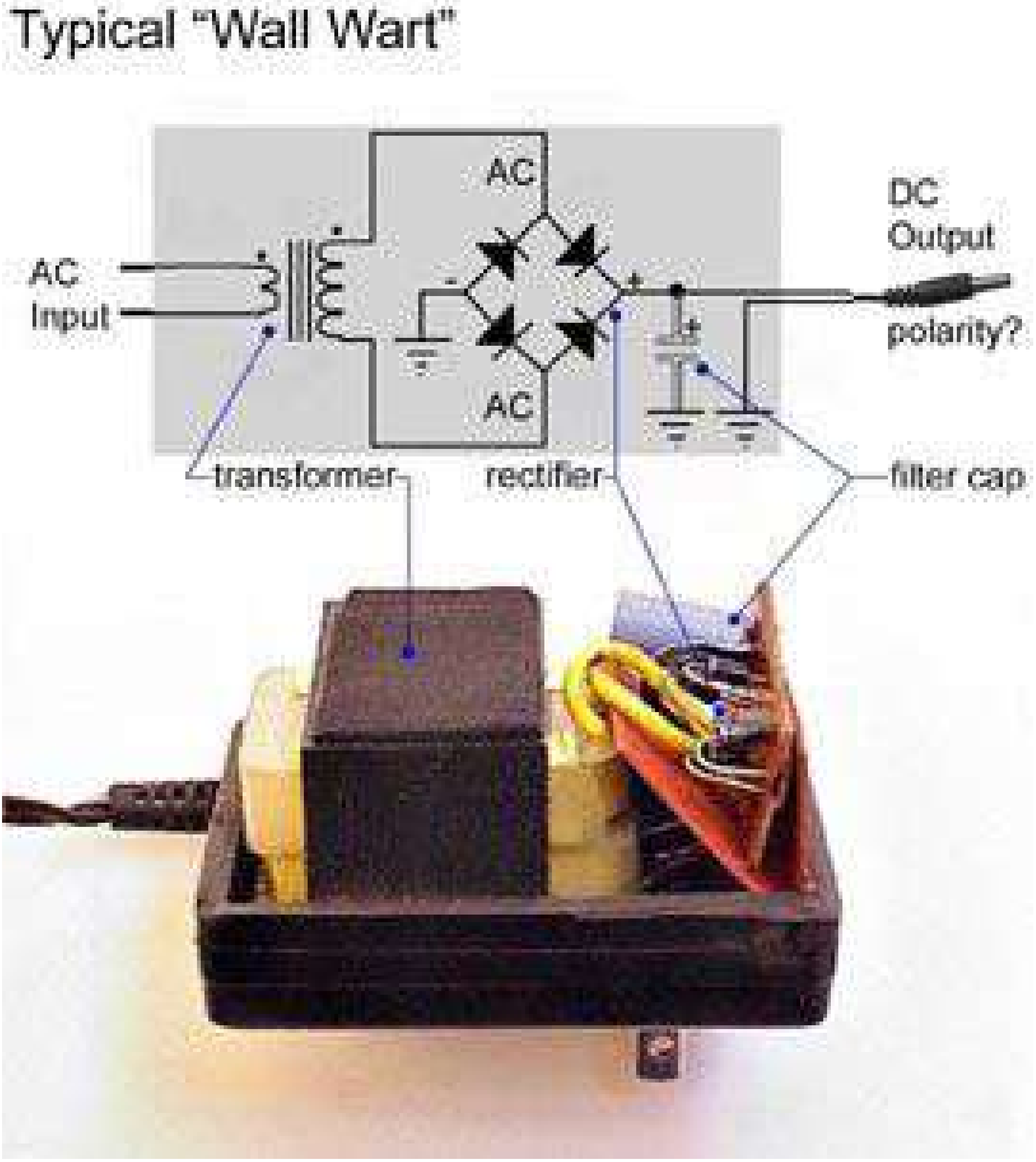
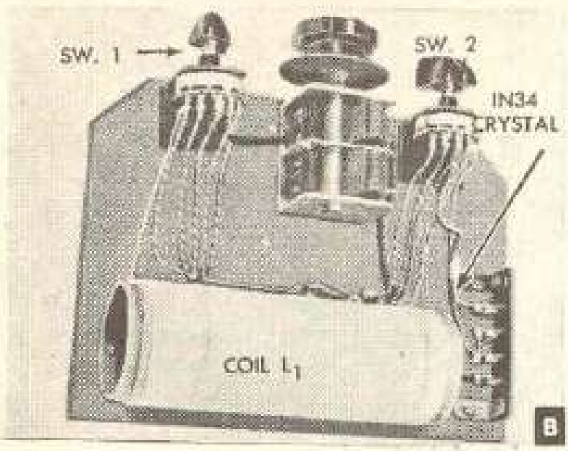


FIG. 2


Typical "Wall Wart"
AC
AC
DC
Output
AC
Input
polarity?
AC
transformer
rectifier
filter cap

RADIO RECEIVERS



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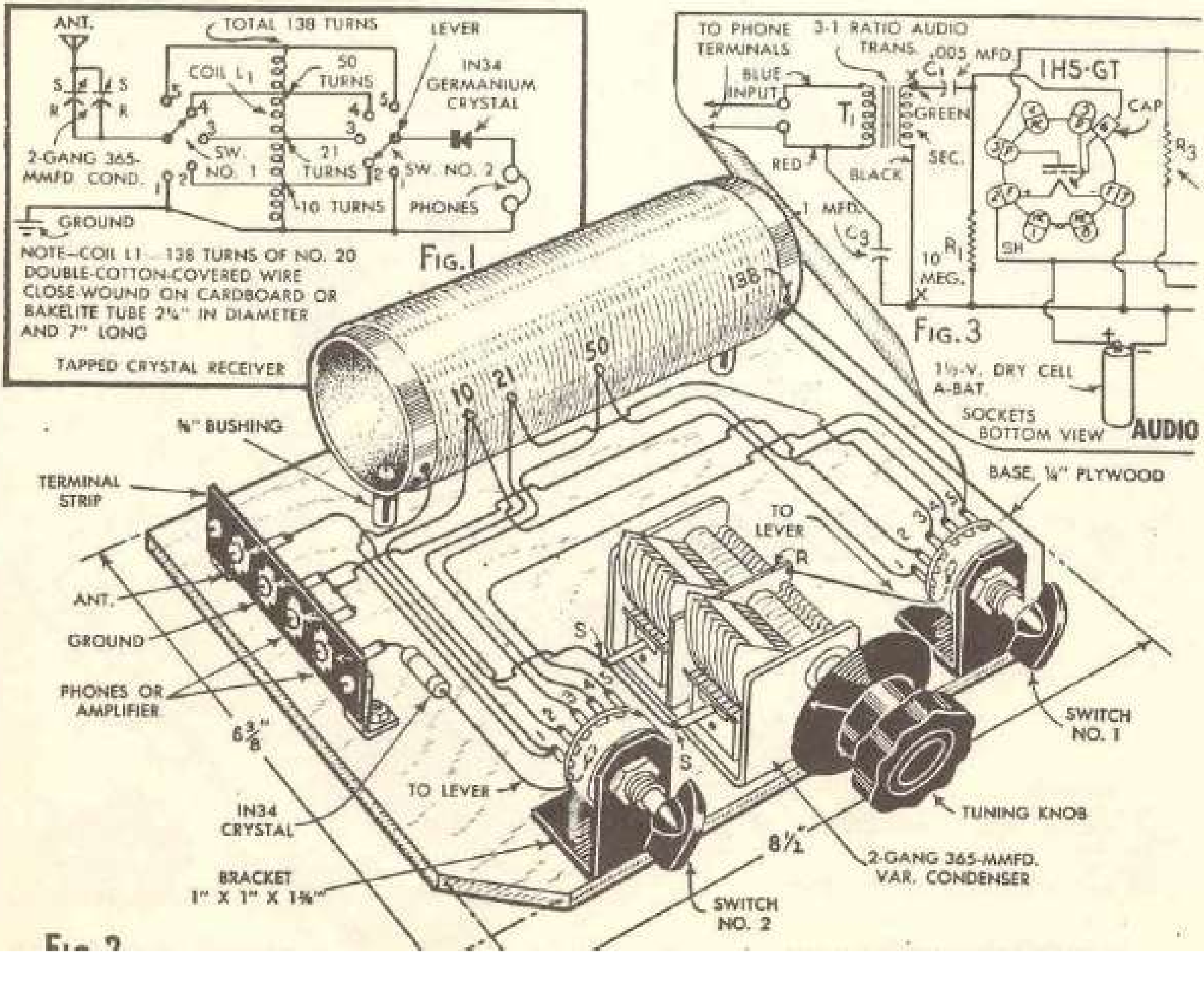
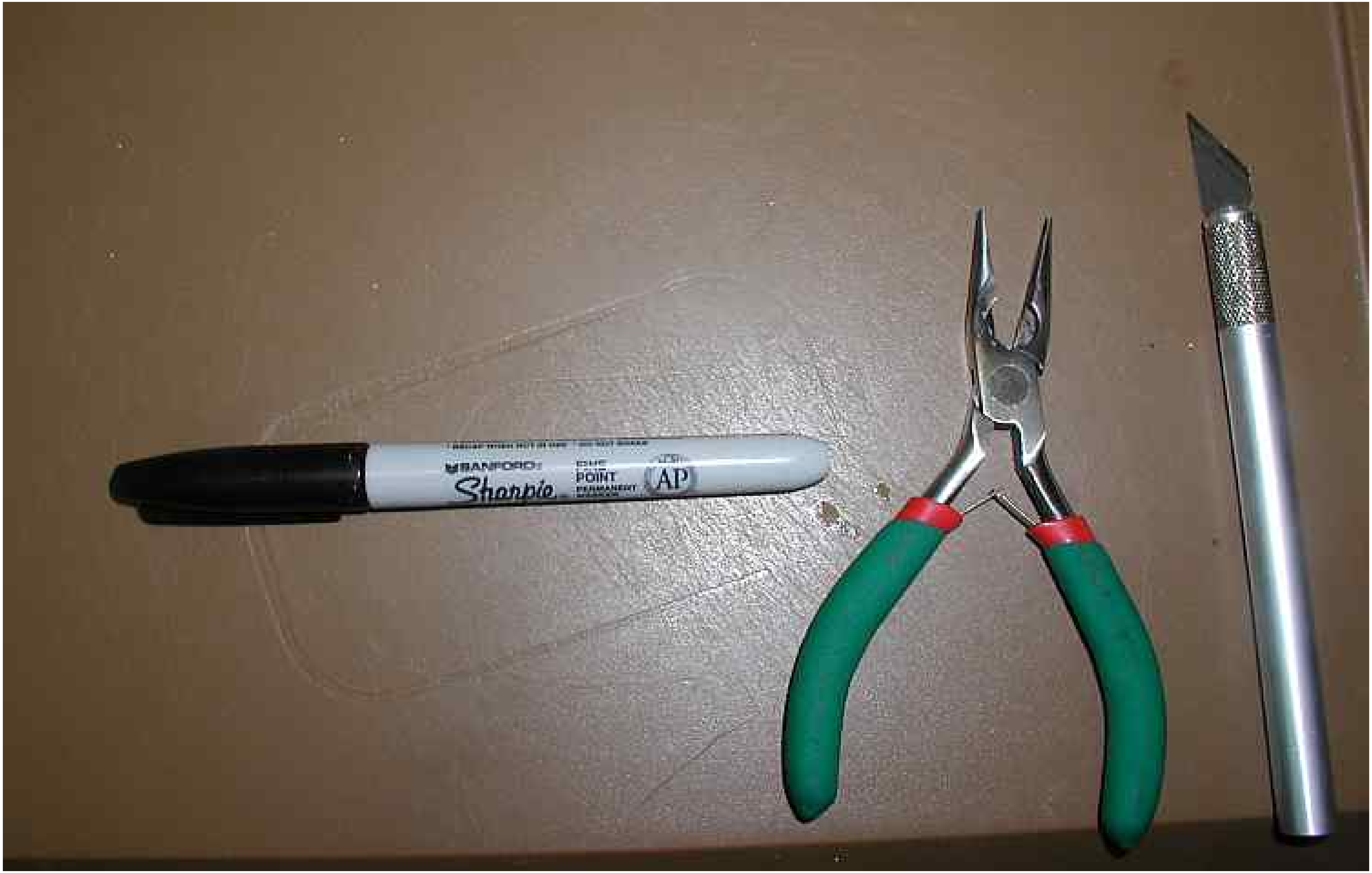
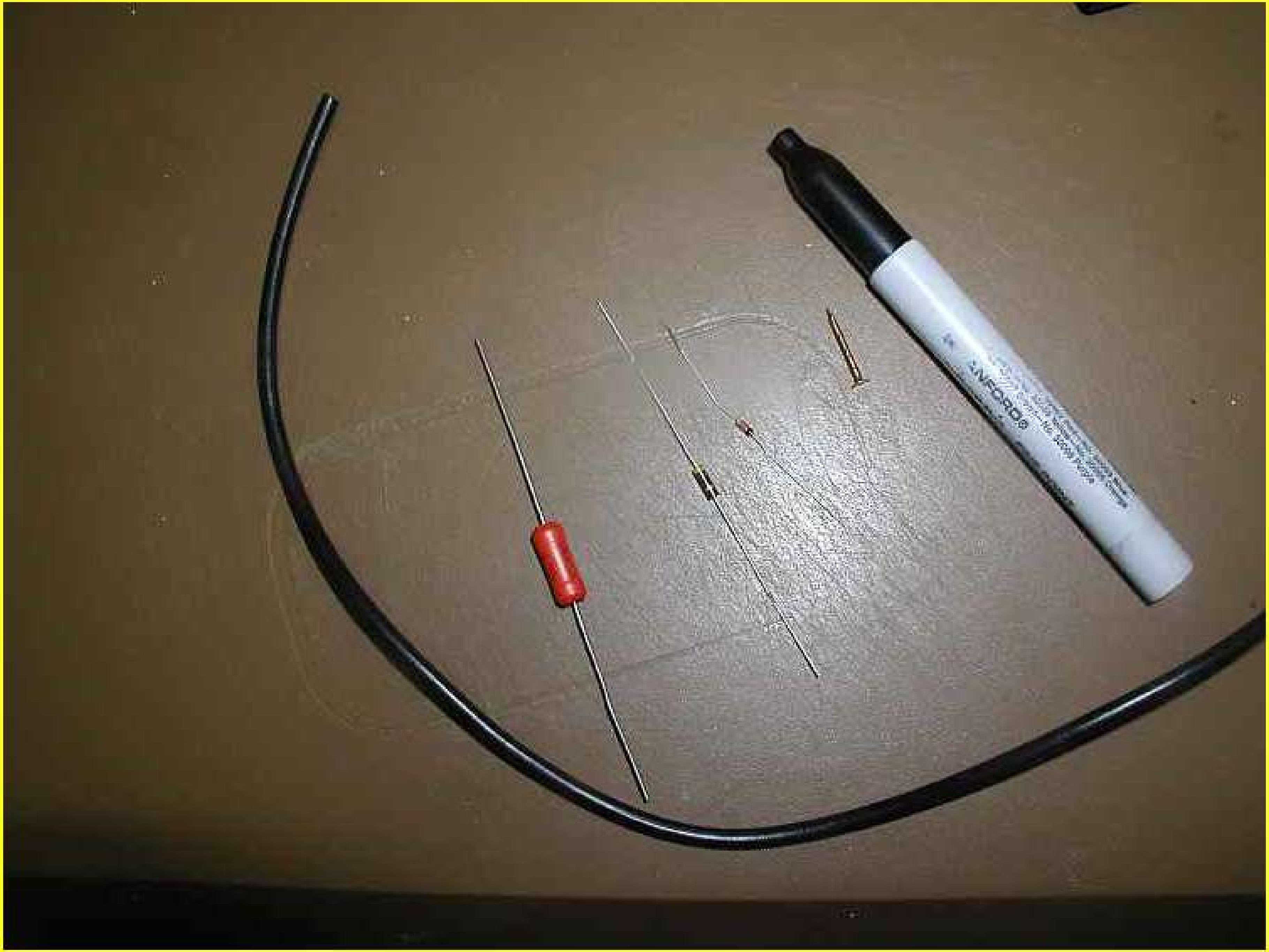


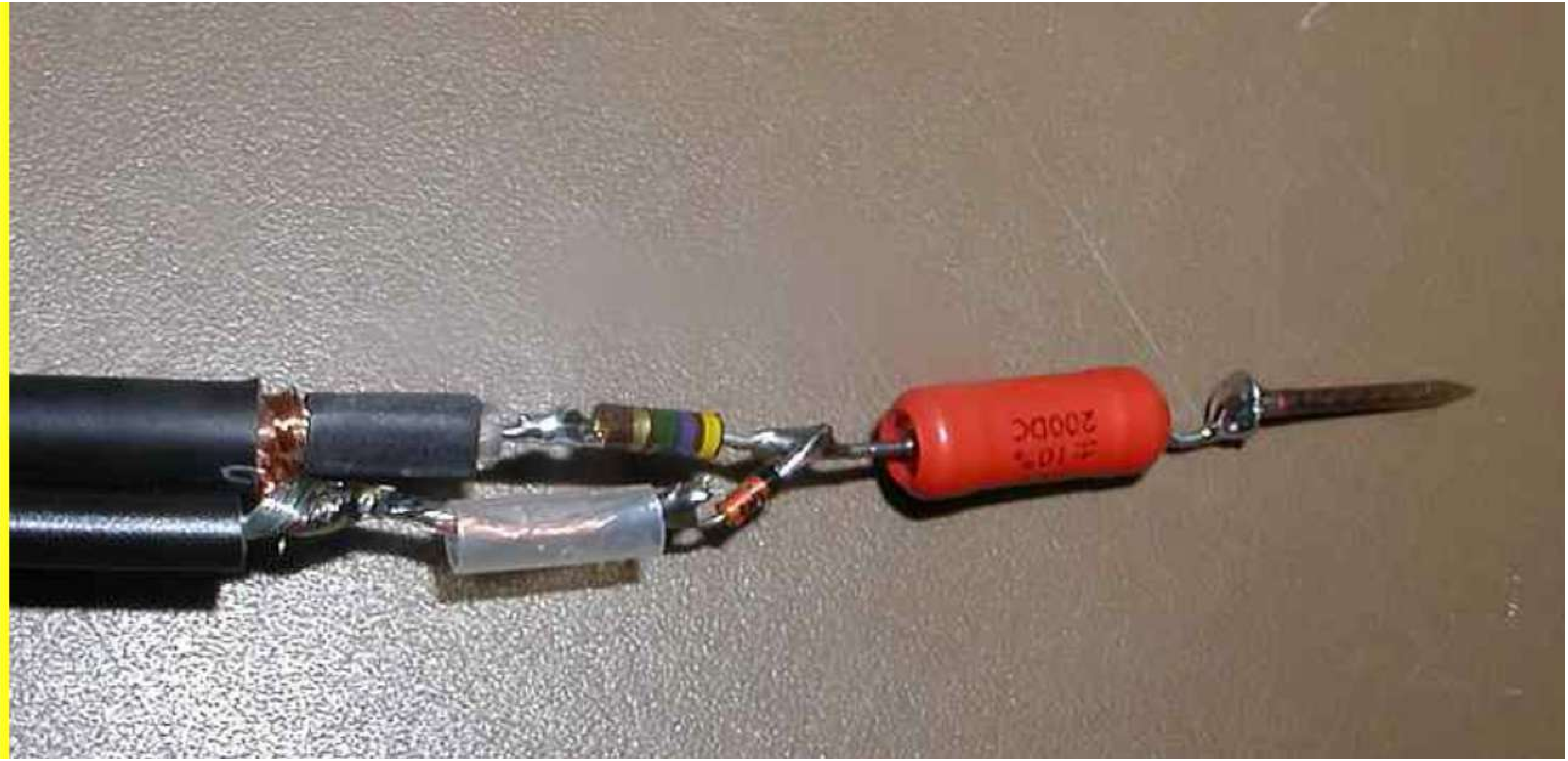
FIG. 2


SANFORD
Sharpie
POINT
AP


FINE POINT

I used a .02ufd cap because it was the perfect physical size, a 4.7 meg resistor, and a 1N34A diode. I had a nice, flexible, p copper nail that would be easy to solder to for a tip.






BRANE-POWER
brane-power.com